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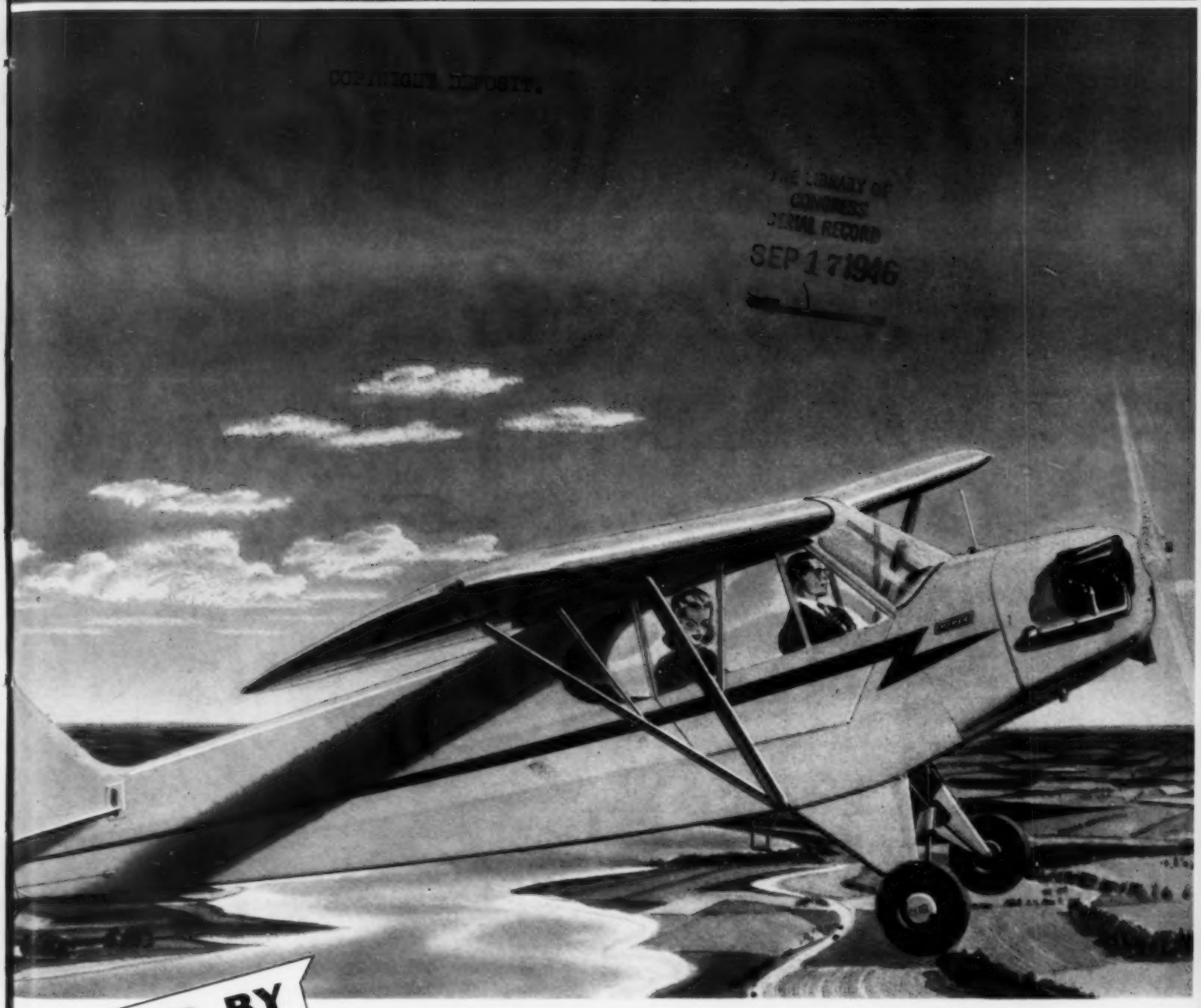

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REVVING UP

March Lightplane Output May Top 1,500 Units

Late reports to SOUTHERN FLIGHT from leading lightplane manufacturers show 1,755 Piper Cubs and 450 Ercoupes were produced between V-J Day and February 25, and indicate that U. S. lightplane output during March will range over the 1,500 mark if materials and accessories are available.

Piper Aircraft Corp., of Lock Haven, Pa., leading in number of units produced, turned out 40 J-3 specials last August, 104 in September, 239 in October, 327 in November, 370 in December, 512 in January and 173, including 10 Cruisers, in February, when the steel strike forced temporary closure. Piper had reached a peak record of 27 airplanes per day in January. Scheduled to reopen March 4, Piper advised SOUTHERN FLIGHT they would produce 600 Cubs during the remainder of the month. Current number of employes was 1,975 at the end of February.

Engineering & Research Corp., at Riverdale, Md., reports they produced 450 new Model 415C 75-hp. Ercoupes between V-J Day and February 25, at which time the rate of production was 300 monthly and growing. Four hundred Ercoupes were scheduled for delivery during March. ERCO now has 2,000 employes.

Thirty-five 85-hp. Swifts were produced between V-J Day and February 25 by Globe Aircraft Corp., at Fort Worth, which also converted thirty-eight Army transports during that period. The factory was producing one airplane daily late in February and planned to deliver 90 Swifts during March, with a working force of 1,065 persons including about 200 still engaged on war contracts.

Stinson Division of Consolidated Vultee Aircraft Corp., at Wayne, Mich., swung into commercial production only sixty days ago but plans call for accelerated output of the 150-hp. Voyager during the spring and summer, with 343 Voyagers scheduled for production next August. Employment there was 1,030 late in February.

Taylorcraft Aviation Division of Detroit Air-Craft Products, Inc., Alliance, Ohio, turned out its first commercial model last August 14 and reports it was producing fifteen airplanes daily at the end of February, when a million-dollar expansion program, expected to "more than triple" current production, was announced.

Luscombe Airplane Corporation at Dallas was producing seven 65-hp. Silvaires daily early in March.

★ ★ ★

Aviation Expansion Around Private Flying Urged

"Horse sense aviation planning" for the expansion of private flying and airport facilities was emphasized at the Ark-La-Tex Aviation Conference in Shreveport last month, with participants from Louisiana, Arkansas and Texas stressing the importance of sound planning in building aviation around the private flier for fullest utilization of the airplane. Speakers at the Conference, sponsored by the Shreveport Chamber of Commerce, included W. T. Piper, the manufacturer; Eugene Norris, chief engineer of the Luscombe Airplane Corp., of Dallas; William M. Berry of Fort Worth, assistant to the 4th Region CAA Administrator for private flying development; George E. Haddaway of Dallas, editor and publisher of SOUTHERN FLIGHT; Gene McGill of Alva, Okla., president of the Flying Farmers; John H. McKee, Southeastern manager of the National Aeronautic Association; John Cunningham of Kansas City, Mid-Continent Air Lines' vice president in charge of operations; Maj. Gen. J. P. Hodges, AAF Training Command chief; Robert E. Chaplin of the Lafayette, La., high school; Asbury W. Meadows, director of the Texas Aeronautics Commission; T. B. Herndon, director of the the Louisiana Bureau of Aeronautics; and Rutherford J. Ross, chairman of the Arkansas Aeronautics Commission. ★ ★ ★

SOUTHERN Flight
Including MODERN AIRPORTS

Thirteenth Year of Progress With Aviation

MARCH, 1946 VOL. XXV. NO. 3

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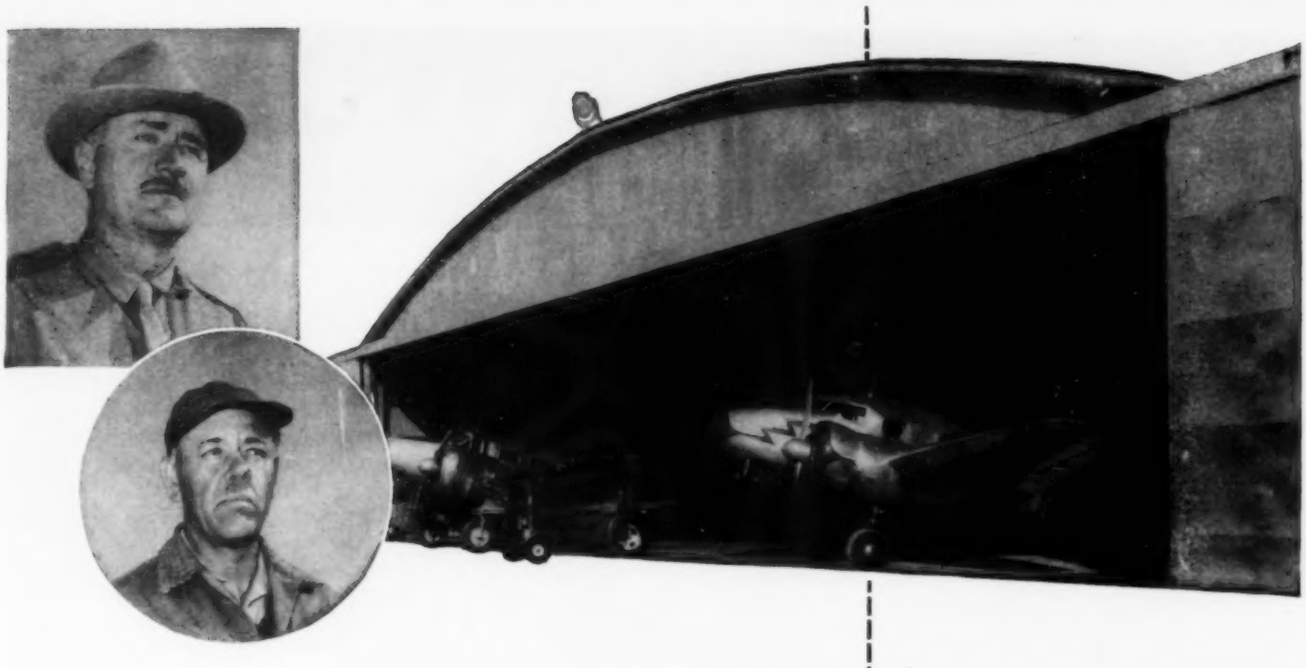

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JUST AMONG OURSELVES

Editorials and Comment

GI FLIGHT TRAINING

THERE'S a fair chance that flight training under the amended GI Bill of Rights might reach proportions equivalent to or even greater than Federal subsidy training under the old CPT and WTS programs. But all isn't gold that glitters. At this writing, everyone, including the regional vet administrators, are so confused the hopeful flight contractor doesn't have much to pin his hopes on. In addition, the opportunity is ripe for chiselling racketeers to move in and fleece both the government and the vets.

Generally, Public Law No. 268 makes provision for veterans to receive concentrated courses of flight training of less than thirty weeks at approved schools. Approval does not mean CAA approval, although it is advisable for an operator to have a CAA-approved school because many regional vet offices will require it. Each state department of education must approve the agency and the vet administration must approve the training costs charged by the operator.

Here are the steps an operator should take in order to qualify for GI Flight Training.

1. Apply for an air agency certificate from the CAA.

2. Apply for state board of education approval.

3. Apply for approval of flight training costs by regional vet administration office. (Flight training costs of less than $14.70 per week do not have to be approved.)

After these steps have been taken, the school must make a contract (Form 1903 Revised) with the veteran, who in turn has been declared eligible by the vet administration.

There can be no doubt that many veterans need additional flight training, especially when it comes to special ratings, in taking the broad jump from military to civilian flying. Likewise, hundreds of thousands of them should be able to take flight instruction as an elective along with their regular college curricula. Serious consequences will ensue if the program develops into a rat race for the opportunists who are ready to snap up some easy money and give valueless or incomplete training that adds nothing to the veteran's future employment possibilities.

These conditions make it imperative that established flight schools take every precaution in giving value received to carefully screened candidates for instruction. It is also the operators' responsibility to see that state boards of education establish high standards of ground and flight instruction instead of letting the bars down to the greedy opportunists.

Not since the days of CPT and WTS has there been such an urgent need for a strong association of airport service operators and flying schools. The National Aviation Trades Association has fallen by the wayside, leaving no organization representing the thousand or more flight training operators to work out the details, the standards and the problems of close co-ordination between the Veterans Administration, the state governments and the flight training institutions.

But the fact that NATA apparently can not shoulder the job does not relieve aviation people throughout the nation of their responsibility to the returning GI, to the American taxpayer and to aviation in general. The GI Bill of Rights either can be a boon to aviation and the nation generally or one of the biggest boondoggles in history. Let's make it an instrumentality of permanent good to the veteran and to the aviation industry.

☆ ☆ ☆

TWO APPOINTMENTS

WE haven't been able to find anyone who will disagree that the appointments of Clarence Young to the vacancy on the Civil Aeronautics Board and of Col. Joe Duckworth to direct the CAB Safety Bureau are two of the best appointments to Federal aviation posts in recent years. Both men are eminently qualified. Neither of them is a lame duck politician without previous aviation experience.

Clarence Young is perhaps the better known of the two because of his long record of excellent public service as chief of the old Aeronautics Branch of the Department of Commerce during the fledgling days of that agency in the late twenties and early thirties. A Republican, he stepped out when the New Deal took over promising a chicken in every pot and a $700 airplane in every garage. Joe Duckworth, a veteran airline pilot, made a name for himself at the AAF Instrument Training School at Bryan, Texas, when he overhauled the antiquated AAF instrument training procedure and turned out instrument pilots who actually changed the course of the war. Until Joe Duckworth came along, Uncle Sam had a "fair weather" air force.

Some people might complain that Young's recent experience as an employe of Pan American Airways and Duckworth's airline background might serve to intensify CAB's neglect of non-scheduled aviation. We don't think so. Their long professional experience and broad understanding of aviation's total problems should work the other way, providing more official attention to and interest in the non-scheduled phases of aviation development.

☆ ☆ ☆

GRASS ROOTS CONFERENCES

WE attended two regional aviation conferences last month which turned out to be inspirational because the people who did the talking knew what they were talking about. This is a rare experience.

The Ark-La-Tex Conference at Shreveport, sponsored by the Shreveport Chamber of Commerce, and the Fourth Region Non-Scheduled Operators Conference at Fort Worth, are the meetings referred to.

We sincerely hope the Fort Worth and Shreveport meetings are symptomatic of a new day in aviation whereby the people from the grass roots take over and tell the Washington servants what to do.

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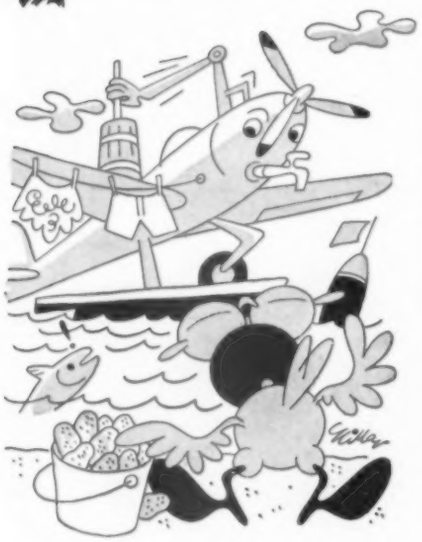

EVERY ONCE IN A WHILE you hear about an inventor who's working on a super-extra-family-type plane, don't you? An amphibious roadable plane that you can swim, fly, drive, and teach to change the baby after 18 minutes of dual?

Well we just read an announcement of a machine which will wash, rinse, and dry your laundry . . . will wash dishes . . . peel potatoes . . . freeze ice cream . . . and churn butter! (Honest!)

So here's an idea which we'll donate free to the first "Society For The Furtherance Of Mankind" we hear about:

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Check the filler caps, the dip stick, and vent lines.

Then wind up with a visual check of the instruments—and a fresh fill of Gulfpride Oil!

L. K. F. A. W. K. P. Dept.

Miss Joan Siesel, Norrisville, Pa., gets a commission as Perch Pilot (bottom rung) for this Little Known Fact About Well Known Planes:

"The propeller on a light plane cruising at 2100 rpm's, will travel 131,950 miles in half an hour!"

Leal R. da Roza, of San Francisco, sent this "Fact"—and proof of it!—so he gets a commission, too:

"It takes longer to fly across the city of Honolulu than it does to fly from N. Y. to Chicago! (Honolulu's city limits are 2200 miles apart!)"

And here's another contribution from Billy Steed, of Leachville, Ark. Steed stands a good chance of becoming our first Senior Perch Pilot, the exalted reward for *five* "Facts" good-enough-to-print, and accompanied with *PROOF!*

"The turbo-super on one engine of a P-61 uses enough air to fill an eight-room house in 60 seconds of flight!"

Well, that's all there is to it, you flying fellers. Send in your "Fact" to the address above (way up there on the masthead) and if it's good—and proved—you may achieve the pinnacle of aviation adulation, a commission as Perch Pilot (br).

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Bell Aircraft's post-war interest in the helicopter is in engineering and building rotary wing aircraft incorporating the advanced design, workmanship and dependable operation which has won this company its place in the Aviation World for being the "Pacemaker of Aviation Progress."

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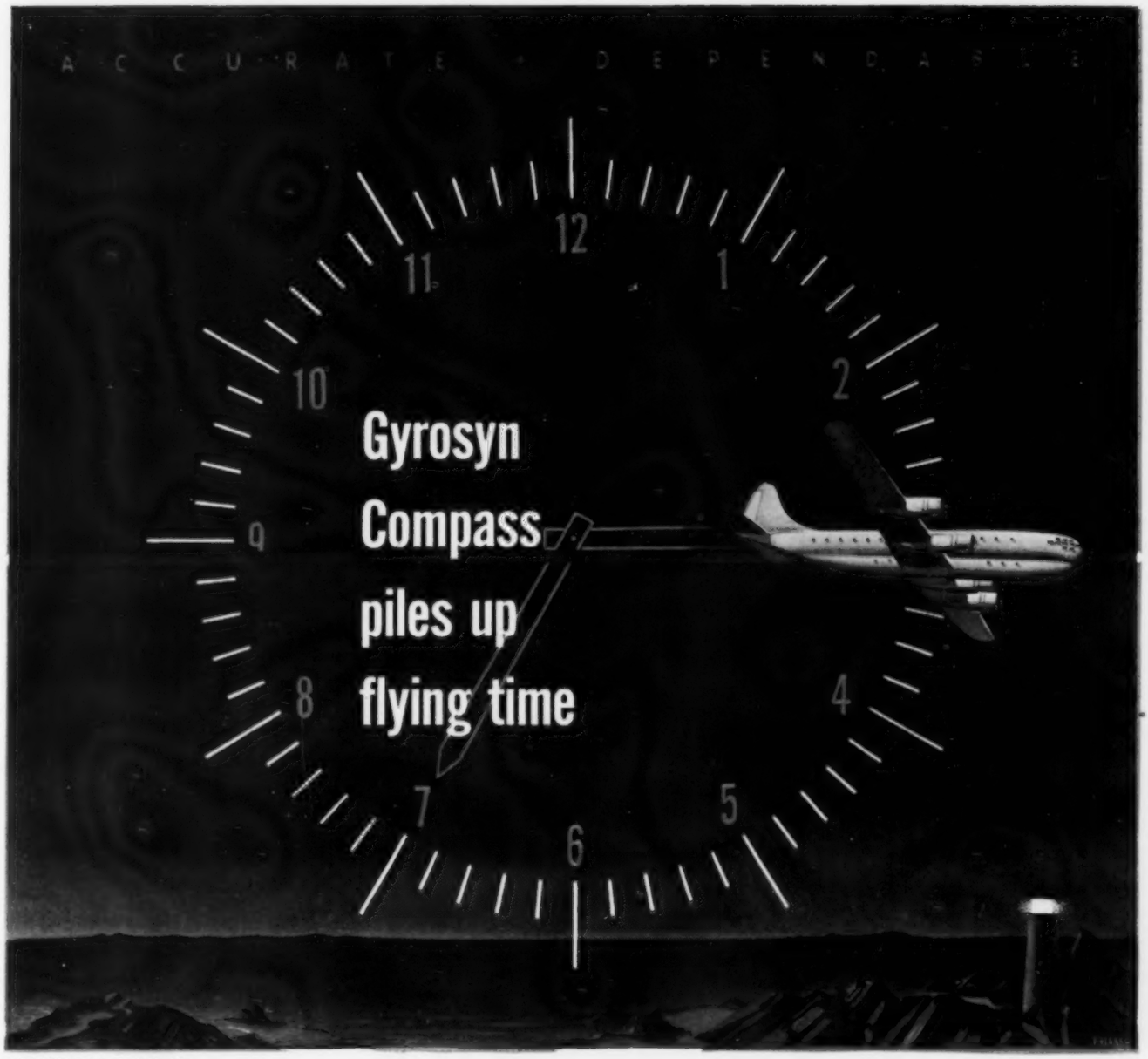

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LETTERS to the EDITOR

Clarifying the Howard's Points

Sirs:

I have just read an article in your January, 1946, edition entitled, "*Flying the Howard*," by A. H. Knouff. The author gives the reader the impression he doesn't seem to know much about Howards. He states an NH-1 has three complete sets of controls and essential engine and flight instruments. There are two sets, one front and one rear. He states the NH-1 is the slowest of the Navy Howards, which is not quite true. It cruises at 120 knots or 138 mph. indicated. He states the NH-1 and GH-3 carry 152 gals. of gas. This is incorrect; they carry 125 gals. of fuel and the GH-2 carries 152 gals—just the opposite of his statements. He states the GH-3 cruises 145 to 150 mph. indicated, which is not true. GH-3's vary from 112 to 117 knots (129-135 mph.).

This man's experience must be fantastic; to average 155 mph. ground speed you must cruise 180 to 185 mph. indicated—so he says. My experience with NH-1's GH-2's and GH-3's was that the average ground speed was 155-160 mph. while indicating from 113 to 120 knots, depending on cruising altitude, which was always 8,000-10,000 ft. if the length of the trip and the weather warranted.

His nightmarish description of landings in these airplanes brands his technique as amateurish and mostly in his imagination. The airplane climbs rapidly at 80 knots but instrument training climbs and let-downs were at 95 knots with 500 rpm. altitude changes. Mr. Knouff's approach speed of 110 mph. (95 knots) with one-quarter flap also brands the amateur. The best approaches, i. e., shallow-banked approach turns, in this airplane are started at 80 knots or 92 mph. with full flap. This keeps the engine running so as to avoid a load-up in case of a wave-off. Slow to 70 knots in the straightaway if landing is to be full-stall. Wheel landings can be flown down full flap at 70-75 knots and held with a reducing throttle to a very smooth contact, and without necessity of "pushing hard on the elevator to prevent bouncing."

M. W. Symons.

El Segundo, California.

★*Author A. H. Knouff, no amateur (16 years a pilot; about 200 hours in all versions of the Howard), was in error regarding the number of controls and fuel capacity, but his mistakes were due to carelessness, not ignorance. Reader Symons correctly gives the fuel capacities, but both he and Author Knouff confused the NH-1's controls—what they should have written is that there are three sets of flight controls and two sets of essential flight instruments, and one complete set of engine instruments. Symons' additional criticism involves piloting technique and speaks for itself.*—Ed.

How's Your City Hall?

Sirs:

As an enthusiastic reader of Southern Flight I was impressed by the editorial *City Hall Airports*. They say that if the shoe fits, wear it; as far as this town is concerned it fits. I would like to have permission to have it reprinted in the Fulton *Daily Sun-Gazette*. Maybe it will help wake the people before it is too late.

Jesse M. York,
Missouri Air Service.

Fulton, Missouri.

★*Go to it, Jesse.*—Ed.

Sirs:

I certainly want to compliment you on two of the best articles I believe I have ever read. *City Hall Airports* in particular, because about all you hear now is just a bunch of hard-up guys too lazy to work, standing up on a soap box trying to sell some small city a $180,000 idea in hopes they will get their hands on it.

Charles Harris, Jr.

Versailles, Missouri.

Things Are Really Fouled Up

Sirs:

I am a little low today and have been walking the floor trying to find out the many, many confusing ramifications of this, these, our aviation activities. I have been promised, repromised airplanes. After the strikes started I was promised and repromised again.

I believe I feel this afternoon like the paratrooper. Maybe I had better tell you about the paratrooper. It has to do with a practice jump. The boys were up approaching the jump area when this paratrooper friend of mine wants to know what he is about to jump for. He is told it is a practice jump; he must leave the ship and immediately pull the 'chute. If the first 'chute doesn't work, pull the safety 'chute and upon reaching the ground, jump on the bicycle waiting there and ride to Hill No. 9, which is the objective. He then wants to know "What if I don't jump?" He is told if he doesn't jump he will be pushed out. So he decides to jump. He pulls the first ripcord; it does not work. He counts to five and pulls the safety 'chute. It also fails to work. Whereupon, he remarks: "I'll bet them - - - - - - - - didn't leave the bicycle there either."

J. F. Lanier.

Memphis, Tennessee.

Don't Say "Hello" Say "This Is"

Sirs:

Re your February, 1946, issue, pages 32-33, "*Two-Way Radio*" by Joe James.

I take issue on the wording of the call up and reply from the tower as given by Mr. James. The word "hello" is never used in aviation radio by the pilot or tower operator. Your article will have pilots all over the country using "hello this" and "hello that." If you will consult the FCC-CAA you will find they can furnish booklet of the standard words to be used by aviation radio communications. To quote from that booklet, the proper procedure for communicating with the tower is as follows:

Pilot (approaching field): New Orleans tower, New Orleans tower, This is NC-349 south of the field at 1500. Request landing. Over.

Tower: NC-349 This is New Orleans tower; you are cleared to enter traffic pattern, wind is So. 10 var. Use runway 18. Over.

Pilot: NC-349 Roger. Out.

In general the article would have been perfect if the "hello" had been left out and the "This is" stressed.

Wilbur T. Golson,
Radio Communications Engineer,
Supervisor Communications,
Louisiana State Police.

Baton Rouge, Louisiana.

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All-Metal structure, fuselage and control surfaces . . . unaffected by either damp or dry climates . . . mean longer life, lasting, streamlined beauty, lowest possible maintenance cost. A feature of both the Cessna 120 and the Cessna 140.

The Patented Cessna Safety Landing Gear, with no moving parts to rattle, oil or service, offers minimum drag. It's a rugged gear that actually combats ground-looping tendencies and smooths out rough landings with its built-in cushion action.

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Full-Range Flaps for both angle of glide in landing and for quick take-offs from short fields are a feature of the 140. The flaps can be set in any position throughout the entire range with the handy manual flap control between the seats.

Excellent Cross-Country Range is assured with 25 gallons of gasoline in twin wing tanks. Both new models, the 120 and the 140, powered with 85 h. p. Continental engines, offer traditional Cessna speed and performance for carefree travel.

Only Cessna Gives You All These Features in the low priced field. All six on the Cessna 140 at only $2995 F. O. B. Wichita, and all but the flaps, starter, generator and navigation lights on the Cessna 120 at $2495 F. O. B. Wichita. See the first of the new Cessnas at your dealer's in March. Later this summer Cessna will introduce the 170 and the 190 . . . two big, high-performance, safety-engineered, all-metal airplanes to complete Cessna's 1946 line of *Fine* aircraft.

CESSNA AIRCRAFT COMPANY, WICHITA, KANSAS

Cessna

THE PILOT'S AIRPLANE

ARMY E NAVY

HANGAR FLYING

LOCKHEED

6 Designs for a Windshield

The people in the Engineering Research building at Lockheed, Factory B-1, Burbank, point out that the unique windshield design on the *Constellation* didn't just happen. Five experiments preceded it.

Windshield No. 1 went into a completely faired nose. It looked good on paper, but when it was mocked up Lockheed found that vision for pilots was bad.

Type 2 was an attempt to put the crew "downstairs". This turned out to be a failure because it would have been pretty uncomfortable in a belly landing. This is the way it looked:

The engineers next tried two small bug-eyes, which were successful only in giving the crew claustrophobia. Discard No. 3:

A wide, single bug-eye type was tried next, but was found difficult for pressurization.

Fifth was a conventional "Vee" windshield, but the fuselage was too big to allow for an effective design.

The sixth windshield was adopted. Besides being the lightest of all, its many small panels give excellent vision angle as well as convenient control and instrument arrangement.

This kind of inspired persistence is going on all the time at Lockheed—the kind that makes good planes and good telling.

L to L for L

©1946, Lockheed Aircraft Corp., Burbank, Calif.

AIR REPORT

☆ SIGNIFICANT TRENDS IN THE NEWS

First Texas-Built Fairchild F-24 Flying

Fairchild's first postwar F-24 personal plane was scheduled to roll off the assembly line at Dallas the first week in March, and will be followed by twelve more new F-24's during the month. Production is expected to reach a rate of three per day by April 1. The four-place modernized F-24 will be sold at $8,875 with 175-hp. Ranger engine and for $8,500 with 165-hp. Warner engine.

★ ★ ★

Globe Balloons 125-hp. Swift Production

Globe Aircraft Corporation at Fort Worth soon will announce it has awarded additional subcontracts to boost its "outside" production to 4,500 125-hp., two-place Swifts. Texas Engineering and Manufacturing Co., at Dallas, recently awarded a Globe order for 1,500 Swifts, is scheduled to deliver its first Swift late in March. Globe is now preparing to contract with a second firm in the Southwest for production of 1,500 more Swifts, and will award a 1,500-plane order to a manufacturer in the Chicago area for still more 125-hp. Swifts. Meanwhile, production in Fort Worth is steadily being expanded on a unique mechanized assembly line, the schedule calling for a peak of sixteen Swifts a day by August, with 85-hp. versions concentrated in the Fort Worth plant.

Three 125-hp. Swifts are now undergoing test flights. The company says one of them, with a Sensenich fixed-pitch propeller, cruised 143 mph. recently over a measured course at sea level, at 2,350 rpm. and 25 in. manifold pressure. Its initial rate of climb was given as 850 feet per minute at 80 mph., and its landing speed was given as 42 mph. with full flap, the same as that of the 85-hp. Swift. The 125-hp. version grosses 1,720 lbs. as against the 85's 1,570 lbs., and its vertical fin is five inches higher.

★ ★ ★

Wright Says Fears Over Oke City Base Unfounded

Will Rogers Field at Oklahoma City has been chosen by the Civil Aeronautics Administration as the location for its General Aircraft Maintenance Base for the Midwest, which will service CAA planes; its Standardization center, which gives special training to CAA inspectors; its Signals Division School, which teaches newest developments to CAA personnel, and other CAA activities. Oklahoma City has agreed to build an administration building and two new hangars for the CAA, which will also use considerable building space left at the field by the Army.

Expressed fears from certain quarters that the CAA training and maintenance center at Will Rogers will compete with established commercial operators are unfounded, CAA Administrator T. P. Wright said in a recent letter to Arthur I. Boreman of Des Moines, chairman of the Non-scheduled Advisory Committee. The new center will stock parts and service all CAA Aircraft, many of which have been acquired from military surplus, but the Oke City maintenance base will not undertake major overhauls, it is said. Main point overlooked by critics is that the Budget Bureau has not and apparently will not provide funds for sufficient aircraft and maintenance for official CAA business in the field. Most of the field personnel have had to travel by auto and train during the past.

★ ★ ★

Jet XP-84, Thunderbolt Successor, Flying

Republic Aviation's XP-84, jet-propelled stub-wing fighter, is the Army's newest jet model to complete first test flights. Its appearance in general follows the Lockheed P-80 pattern, but differs in numerous respects including (1) hollow-nose air intake, (2) longer nose landing gear strut, (3) "flatter" laminar-flow airfoil and (4) elevated horizontal stabilizer. It has no resemblance to the P-47. Powered by a General Electric TG-180 axial flow turbo jet, the XP-84 is expected to develop a top speed of more than 600 mph. It was designed by Alexander Kartvelli.

★ ★ ★

Lightplane Roundup

Beech Aircraft Corporation was scheduled recently to begin an unusual 1,000-hour flight test of its all-metal four-place Model 35. Pilots will take turns flying it during that lengthy period. . . . Jack & Heintz of Cleveland was expected early in March to announce details of its revolutionary new 75-hp. aircraft engine, said to weigh 150 lbs. and to have a price tag of about $262.50. . . . Newest experimental airplane reported under way at Culver Aircraft Company in Wichita, Kansas, is a small design having two 2-cycle engines, one mounted in the nose and the other in the tail. Culver, which is also said to be involved in supersonic studies, on the military side, has started production of its Model V, and the production model is said to be better than V-1, which was heavier.

Flightweight

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Built to the same quality engineering requirements hat have won for Bendix Radio world renown as 'Standard for the Aviation Industry"—this latest addition to the "Flightweight*" line consists of a 5-channel V.H.F. transmitter, a medium frequency radio range and broadcast receiver and power supply, all housed in a 5x7x7-inch aluminum case which is attractively finished in hammered-effect metallic lacquer.

Now, with "Flightphone" as a traveling companion flights will seem shorter and more entertaining . . . navigation will be easier . . . and time loss can be appreciably lower due to the ability to make straight line flights and request clearance for landing upon or before reaching airport. All in all, Bendix "Flightphone" will bring personal plane pilots many added hours of pleasure flying. Backed by the greatest name in aircraft radio the "Flightphone" is going into production *now*. Ask your airport operator about it or write Bendix Radio Division, Personal Aviation Sales.

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Size: 5″ high, 7″ wide, 7″ deep.
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Instant response to the lightest control pressures and stable flight characteristics at all speeds make long flights in the Southernaire easy and luxuriously comfortable. Completely equipped with gyro instruments, two-way crystal controlled radio, and a full complement of engine instruments, the Southernaire, with a range of 760 miles, is ready to meet the close time schedules of American business. Write for complete details.

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An excellent airport development program can be built around an appropriate size Erwin-Newman conventional Shop Type hangar to be used as an operations, sales and service base . . . and batteries of Erwin-Newman Nested-Tee hangars for all private storage. The original investment, in many cases, would be only the conventional hangar or the first Nested-Tee. Then, as additional traffic and need for the facilities demand, additional hangars can be added.

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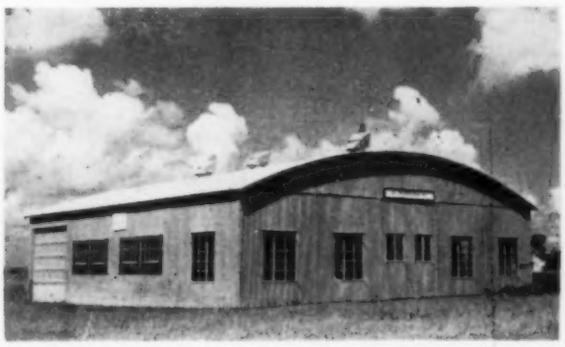

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Oakland Municipal Airport
Oakland, California
544 Seventh Street
San Diego, California
6265 San Fernando Road
Glendale, California

*Standard Aero Eng. Works, Ltd.
St. James
Manitoba, Canada

*Laurentian Air Ser., Ltd.
Ottawa Airport
Ottawa, Ontario, Canada

*Embry-Riddle Company
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Washington Park Airport
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Tulsa Municipal Airport
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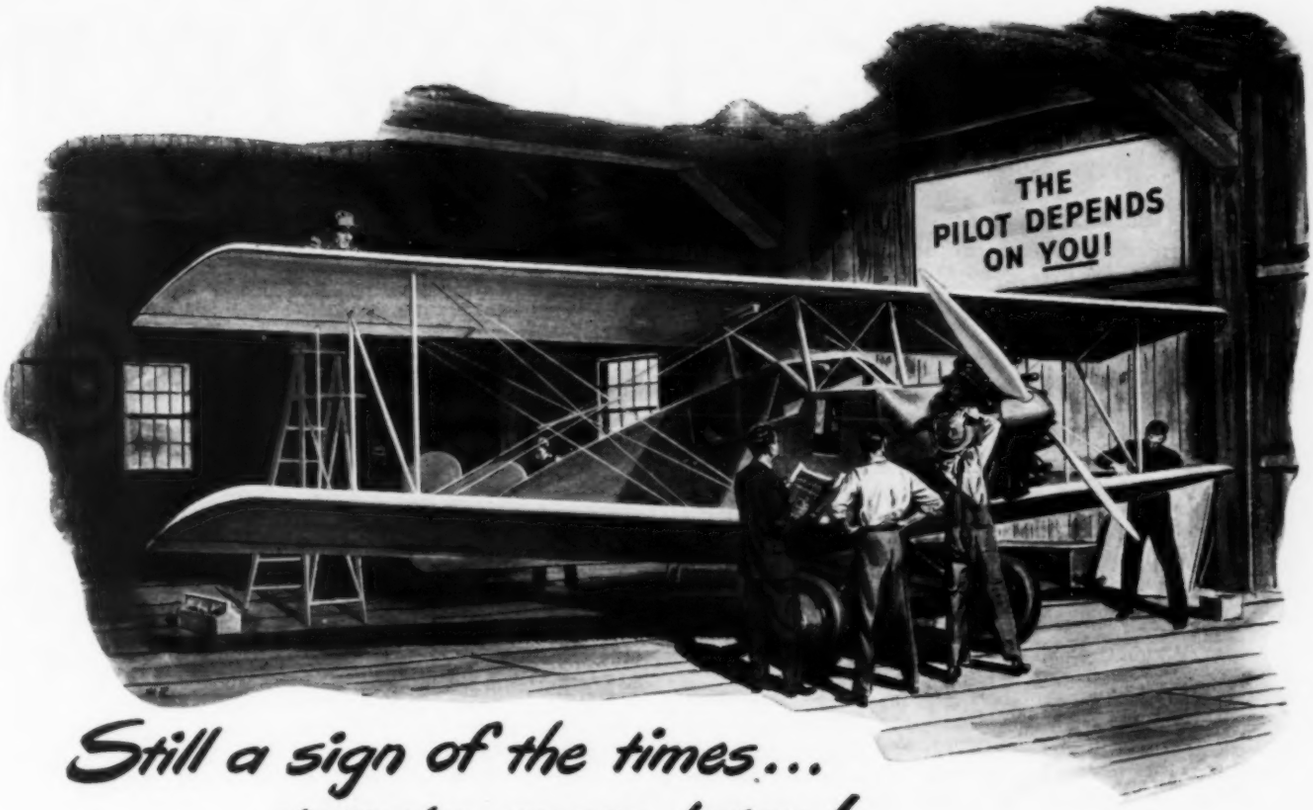

Still a sign of the times... twenty years later!

IN THE WINTER OF 1925, a newly formed company headed by Eddie Stinson rented a small loft factory in Detroit to build airplanes.

And Eddie Stinson set about to hire the few workmen needed to build a new kind of plane he had designed.

When those first Stinson craftsmen showed up at the "plant," they were greeted by a large sign that Eddie Stinson had hung on the wall:

"THE PILOT DEPENDS ON YOU!"

But Eddie Stinson didn't depend on this sign alone to get from his workers the kind of craftsmanship that made planes safe to fly. Men who made a Stinson were taken on the *first test flight* of the plane that they had built.

After the first Stinson plane was produced and proved in flight, the Stinson "factory" was moved to larger quarters.

Eddie Stinson's sign went along, as a necessary part of the business of making Stinson planes.

SAFETY IN FLIGHT is a tradition with Stinson designers and craftsmen!

The very first Stinson plane built had safety design features that gave it an *inherent stability* never before seen in an airplane.

Stinson started as a standout, and Stinson has maintained its leadership in the field of personal flying for more than twenty years.

You can depend on Stinson to bring you the utmost in flying safety!

The New STINSON VOYAGER 150—For Safe, Speedy, Luxurious Air Travel

Manufactured under Civil Aeronautics Administration Type Certificate Number 767

Stinson

EASY TO BUY...EASY TO FLY

Here's the personal plane that will bring you luxury air travel *at a price you can afford!*

The Voyager 150 accommodates four comfortably in the richly upholstered, adjustable seats in its soundproofed and ventilated cabin.

And it operates at an over-all cost that compares favorably with what you pay for transportation in the family car!

The power, speed, range, and maneuverability of the Voyager 150 make it a plane that you can fly anywhere. It cruises at 125 m.p.h., has a maximum speed of 133 m.p.h., and a range of 500 miles.

Let us send you a free, illustrated brochure telling all about this standout personal plane. Write **Stinson Division, Consolidated Vultee Aircraft Corporation, Wayne, Michigan.**

FLYING DOWN TO

Armed with an outmoded map of Mexico borrowed from an Army Sergeant, this private flier took the high road to Mexico City. In spite of fleas, hot beer, and forced landings, everything was going nicely until that cross-wind take-off from an up-slope cactus patch.

By FRANK P. MERKLE
As Told to George A. Scheuer

MEXICO, the land of the señoritas, cucarachas and warm beer, seemed a long way off until a friend told me about a party of four persons planning to fly there from Chicago in a pair of two-place airplanes. We took a look at the maps and decided to accept their invitation to join the party with my Luscombe Silvaire.

Since I was delayed three days by work, the other two planes took off from the Pal-Waukee airport on Sunday without us. My plane was at the Waukegan airport for a final check-up. On Tuesday I flew it from there to the Chicago Municipal Airport, where I picked up Arnold J. Doescher, my friend and passenger for the trip to Mexico City.

We left the Chicago airport June 18, 1945, at 5:30 p. m., and, en route to the border, touched at Springfield and E. St. Louis, Mo.; Tulsa and Seminole, Okla.; Fort Worth, Austin, Alice, and finally Brownsville, Texas. I might add in passing that the airport at Springfield, Mo., was not where I expected it to be. As a result, I made an after-dusk forced landing on Highway 66 by-pass, much to the consternation of motorists.

Cut "Red Tape"

At Brownsville, we were greeted by Thomas P. Benson, manager of the airport, who gave us the first news we had of the two planes ahead of us. He said they had left for Monterrey, Mexico, two days earlier. We had expected the flight leader would leave us a message and maps giving directions for the balance of the trip to Mexico City as promised. There was neither message nor maps. Also it was Saturday afternoon and all customs and immigration officers were gone for the week end. It looked rather dismal until Mr. Benson went into action. The necessary officers were consulted, all papers were ready in two hours and we were able to borrow a Mexican map from a sergeant of the Border patrol. So at 6 p. m. we headed for Monterrey, Mexico—200 miles away!

We reached Monterrey about 8 p. m. A group of soldiers dashed up to our plane gesticulating wildly. It took some time, with our terrible Spanish and their English, to learn we

When we returned with precious gasoline, we found our caballero had made himself comfortable. He had thrown a tarpaulin over the wing and had weighted it down with several heavy rocks. With him were his wife and ten companions. He presented us a bill for 175 pesos ($35) for two days. When we asked why so much, he said he had hired the others to help him. So we settled for 125 pesos or $25 and got his permission to take the plane out.

MEXICO

were on a Mexican Army field. They directed us to the American Airlines port ten miles north and we found this to be a beautifully appointed spot with concrete runways.

Only when we were preparing to leave on Monday morning did we learn that our friends, delayed by motor trouble, had left Monterrey only four hours before our arrival Saturday. We had made inquiries on our arrival, but the man to whom we talked had just come on duty and did not know of the earlier flight.

"Fee" Works Wonders

Our destination was San Luis Potosi, which was halfway to Mexico City and about 300 miles distant. There seemed to be an abundance of Mexican soldiers at every airport and we had considerable difficulty in obtaining permission to fly on, due to our sparse acquaintance with the language. After considerable argument, and loss of time, we learned they wanted our names and a two-dollar "fee." Had we understood the latter part first, I doubt if the names would have been important.

We flew over the great Mexican desert and the single track railway we followed led us through some very historic U. S.-Mexican battle spots, including Montezuma, which is immortalized in the Marine hymn. No airport was indicated and we saw no place to refuel so we kept on flying even though the gauge needle was flirting with the zero mark.

At 2 p. m. we sighted the American Smelter plant at San Luis Potosi and found the airport just east of the plant and southwest of the town. Our first trip over the mountains had been duck soup.

"High" Low Octane

The line boy who pumped gas from a drum marked "73 octane" charged us for "93" and when this bit of legerdemain was called to his attention he explained that he had filled the drum with the higher rated fuel that morning. He argued so much about this point that we neglected to check the plane's tank ourselves to be sure he had filled it to capacity. This is mentioned because of what happened later.

We took off at 5 p. m., feeling sure we could reach the airport at Mexico City by sundown. Following a road which ran in a southeasterly direction, we went through pass after pass, and gradually the terrain reached higher and higher. Suddenly the road ended in a valley at a group of beautifully colored but abandoned buildings. Our map indicated a trail continuing on the route we wished to follow, but we could see nothing on the ground.

After the road ran out on us, we flew in a generally southerly direction in order to pick up the east and west single track railroad, which our map indicated should have been about 50 miles ahead. We came upon the railway as anticipated and turned east with it again to pick up the highway at San Luis De La Paz. Spotting the airport at the south end of town as shown on our map, we followed the road to Queretero. We had planned to refuel at Queretaro, but we were unable to locate the airport. We learned later our map was incorrect and that the airport was 18 miles distant. Realizing it would soon be dark in the mountains—although it was only 7 p. m.—we went on.

This, along with our diminishing fuel, caused a bad case of jitters and we decided to land as soon as a suitable spot presented itself. We chose a white stone road which looked good from the air, but proved decidedly rough on both plane and anatomy.

The Peons Take Over

There wasn't a soul about as we rolled to a stop, but in fifteen minutes we had a crowd of 2,000 peons, and evidently none had ever seen an airplane close up. They crowded around. Some patted the plane as though it were a horse. The more venturesome ones worked the ailerons until I thought they would come off their hinges. Others grabbed the propeller. It was useless to ask or motion them away, for they neither understood nor were willing to stand off. My companion decided to search for an interpreter in town. After fifteen minutes he returned with one of the largest men I have ever seen. He must have weighed 300 pounds and he rode the rump of a burro that weighed less than he did.

The big man carried side arms and with him was a lightly built, genial,

smiling interpreter, Ricardo Torres Ortiz. Ortiz was a bright spot in a complicated situation and through him we made arrangements for our big Mexican hombre to stay with Doescher and guard the plane.

It was now totally dark and I suggested that our guard ask the peons to stay 50 feet from the plane. He made one circle of the plane and got them to stand at 50 feet, but as he walked around the circle the crowd closed in behind him. When I asked him sharply to get the crowd back, he mumbled he could not force the people back inasmuch as they were all his friends and would be angry with him. Hoping for the best, I started for the village.

By this time I was spitting cotton through the swirl of dust and asked my host to lead me to a glass of beer.

When the padlocked door of a tavern was opened I was amazed to see the place had a dirt floor and about 10 feet of very crude counter made of rough boards. This, I anticipated, might be my bed for the night. Later I wished it had.

If you have never had a taste of hot beer, you have something to look

My host had fastened the door by bracing a stick of wood against the latching side. This had slipped down during the night and as dawn broke, the chickens came in to pick up the fleas that were not on me or my companion.

forward to. We found that ice and refrigeration were unknown and the beer was about as palatable as a bowl of warm motor oil.

The Fleas Take Over

The town's one small hotel had no space, but my friend Ortiz found an amigo, who was a guest at the hotel, who volunteered to give me his bed while he slept on the floor. Overly polite, and dumb too, I said I would accept only if he would share the bed. To avoid possible "night crawlers," I wanted to sleep in my shoes and trousers but in deference to my host, who had removed his, I did likewise and crawled in bed. Through the night my lullaby was the braying of burros and the stumbling of hotel guests as they found their way to the community toilet, located about 10 feet from my room. My host had fastened the door by bracing a stick of wood against the latching side. This had slipped down during the night and as dawn broke, the chickens came in to pick up the fleas that were not on me or my companions.

I arose early and walked to the plane. Doescher started to give me a tale of woe about how he had suffered cramped up in the plane with nothing to keep him warm but a bottle of American whisky which he had brought along "for medicinal purposes."

By this time we knew we were in the village of Polotitlan, about 65 miles northwest of Mexico City. I ran a stick into the fuel tank and found we had slightly over two inches of gasoline. There was no chance of obtaining even automobile gasoline so we decided to chance it to Mexico City, keeping above the highway in case of a forced landing. Later we learned that there was an airport at Actopan, about 35 miles directly east of us with concrete runways and plenty of gasoline. It was a new airport and not shown on our map.

Forced Landing

When we were over a point about 35 miles from Mexico City, the motor sputtered a few times and quit. Realizing I could not reach the road, I picked a clearing on the north side and decided to make an uphill landing between two large trees and a considerable growth of cactus. We hit doing about 85 mph. and we stopped after a very short upgrade run, with no damage!

Two Mexican cowboys rode up on their ponies with the usual sidearms. One of them offered to ride to town for a car. We gave him ten pesos. He asked for five more and we had no choice. As he rode off across the field a jack rabbit with ears a foot long jumped up. Our cowboy forgot his mission and chased the rabbit, firing his revolver until it was empty.

Hour after hour we sat in the hot sun. Finally a small sedan drove into sight. For two dollars the driver would take us to Tula. His tires were filled with inner shoes which bulged out through the holes in the casings like so many carbuncles. But they held together.

Senor Fink to the Rescue

In Tula we made a deal with a Mexican caballero to guard the plane for thirty pesos (six dollars a day). It would take us two days to get the required fuel from Mexico City, for while it was only 40 miles by air, it was 115 by road. We telephoned a friend in Mexico City, Señor Alphons Fink, and since Señor Fink could not get the railroad to bring us fuel, he and his family brought it down by automobile.

When we returned with the precious gasoline, we found our caballero had made himself comfortable. He had thrown a tarpaulin over the wing and had weighted it down with several heavy rocks. With him were his wife and ten companions. He presented us a bill for 175 pesos ($35) for two days. When we asked why so much, he said he had hired the others to help him. So we settled for 125 pesos or $25 and got his permission to take the plane out.

A southeast wind made a downhill take-off necessary. We got everyone to help in clearing a runway through the boulders, trees, and cactus. If it hadn't been for the high-handed tactics of the caballero, I might have awaited a more favorable wind for the take-off. I was afraid that if I stayed any longer I would have to give him the airplane for watching it.

End of the Line

The cross wind had been light and gentle before I started my take-off run, but no sooner had the wheels left the ground than a gust drifted me toward a tree. There was nothing I could do but try to develop enough momentum to handle the plane. However, I was not able to get enough control and the tree top caught the wing tip, throwing me in a horizontal loop around the tree. I looped about 160 degrees, hit the ground with the left wing tip and landing gear, and stopped 190 degrees from my take-off heading.

The only truck driver in Tula agreed to haul the plane over the mountains. I gave him $10 to buy padding to pack between the various parts, but when he arrived in Mexico City the following morning he explained he

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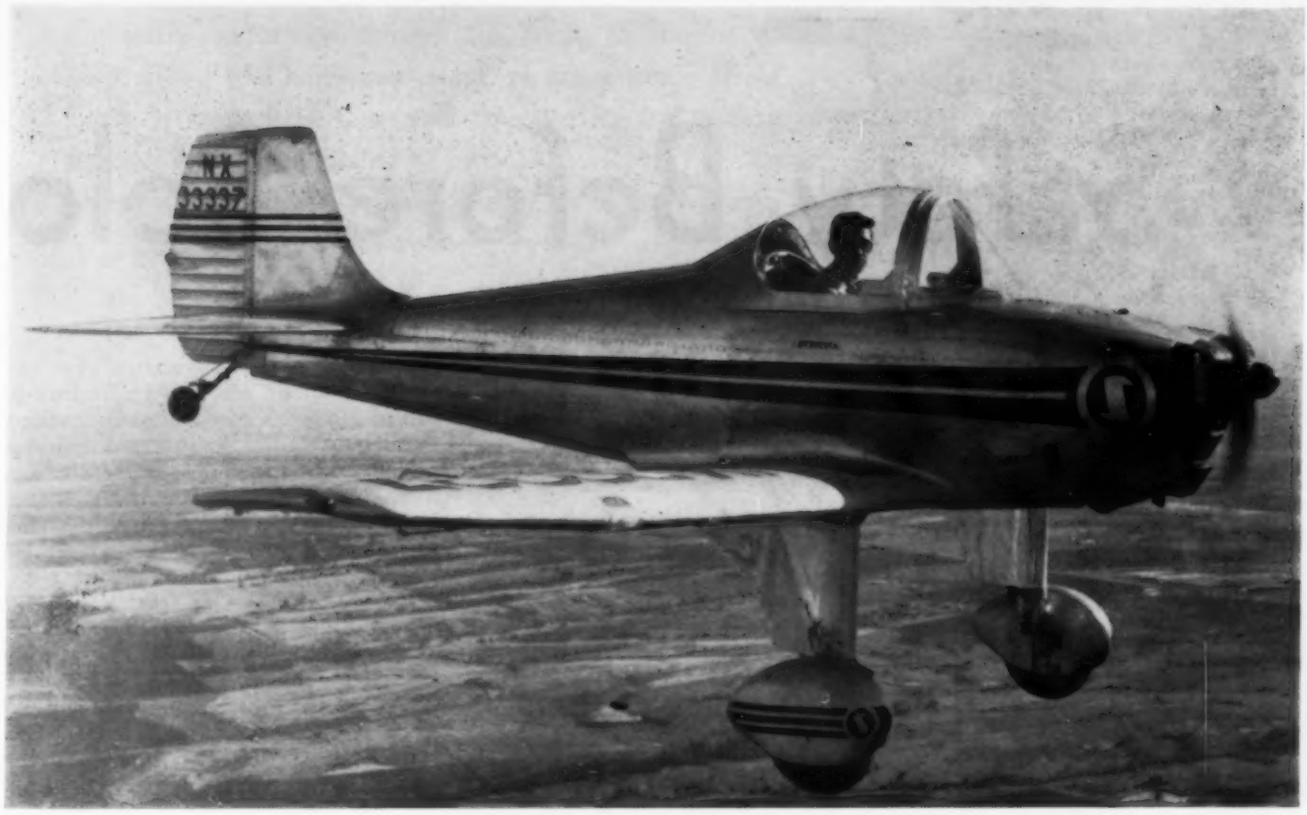

Close-up flight photo emphasizes high-performing Luscombe Model 10's cropped fin, bubble canopy and fixed conventional landing gear. Its power plant is a 65-hp. Continental and its cruising speed is given as 122 mph.

—(Luscombe Photo.)

Luscombe's Single-Seater

INTEREST in single-seater lightplanes has been revived by the appearance in the Southwest of a low-wing offshoot of the popular Luscombe Silvaire. Around the Luscombe factory near Dallas they say the new single-seater, known as Model 10, is a "natural" as far as design and performance are concerned. But they are awaiting the outcome of market studies before deciding about quantity production.

Some observers believe the market for such a craft would be small, comparing it to that of the motorcycle in relation to the demand for family autos. Others, however, see in the single-seater a fast, economical vehicle for transportation, especially for salesmen who need performance more than extra seating capacity.

Luscombe's little low-wing is one of three single-seaters with reasonable possibilities of reaching the market. Lockheed's Little Dipper, built and tested in pursuit of engineering theories, has been shelved for the time being, according to latest reports which followed its recent crack-up in a test-flight accident. But Piper's diminutive Skycycle and an independent design, the Skyhopper, seen frequently around Kansas City and Dallas, are still possibilities for the private pilot who wants low-cost performance and single-seat capacity. If Luscombe decided to market its Model 10, it probably would be the first on the market in quantity, for the company says it can be readily produced with many of the parts and tools used in Silvaire production, which is currently being rapidly expanded.

Model 10 has the unusual distinction of emerging from engineering and construction as a right-the-first-time product — neither Test Pilot Bob Burns nor the engineers found it necessary to suggest any significant changes during more than 30 hours of test flying to date. "You've got a good airplane just like it is," Burns reported after its first hop. "Don't change a thing."

Model 10 was designed by Misha Kantor, Luscombe engineer who turned it out to fly less than six months after its original conception. On its first cross-country, Model 10 flew from Dallas to Shreveport, a distance of 182 miles, in one hour and thirty minutes with a 26-mph. cross-wind. L. H. P. Klotz, Luscombe president, says the airplane's cruising speed is 122 mph. and places its top speed at more than 135 mph. Fuel capacity is 15 gallons and consumption is said to be four gallons per hour at cruising speed.

Model 10 is powered by a 65-hp. Continental engine, weighs 845 lbs. gross, has a 25-ft. wingspan and an overall length of 17 ft., and is of all-metal semi-monocoque construction, except for its fabric-covered wing. These company figures compare with the two-place 65-hp. Silvaire's gross weight of 1,200 lbs., 35-ft. wingspan and 20-ft. length. Model 10's full cantilever wing is joined to the fuselage by four bolts, and fixed main landing gear struts are braced into the front spar. Exceptional streamlining was achieved with landing gear fairing and wheel pants, wing root fillets and bubble-type canopy.

Undecided about production plans, Luscombe has not mentioned price possibilities for the single-seater. ★ ★ ★

Safety Before Solo

IT'S a comfortable feeling—having our instructor right there in front of us to "take over" whenever we make an error, but lest we become too reliant upon him, we had better find out who's supposed to be responsible for safe flying during the presolo period.

When the instructor tells us that the *way to avoid the propeller hazard* around conventional planes is always to enplane and deplane from behind the wing, we have learned the first of many good practices, each of which provides one or more precautions against hazard. Our responsibility for this precaution begins immediately; in the future, enplaning and deplaning from behind the wing is our responsibility.

With each succeeding lesson we will be given one or more of the customary good practices which cover the precautions necessary for safety in solo flight. We can expect the instructor to act as a safety pilot only for that part of the flying with which he has not yet familiarized us. In other words, he expects us to assume responsibility for each good practice from the time he introduces it.

Furthermore, he will expect us to be responsible for 100 per cent of our flying before he solos us. Actually, he will be much more concerned about our mastering the good practices which make for safe flight than about our technical proficiency. If soloing the airplane depends so much on the mastery of safe practices we ought to know what safe flying is and what the specific safe practices are for the presolo period.

Basic Safety Principle

When all of the routine flight procedures have been reduced to automatic habit the mind is free to deal with the unusual or emergency situation. Flying requires such things as prompt judgment of speed and distance, accurate interpretation of various sensations of feel, rapid muscular reactions and quick reasoning. It would be a highly complex skill were it not for the fact that much of both the mental decision and the physical manipulation is done through the subconscious mind. To subconsciously perform the routine action of flight, the pilot must possess many well-formed habits.

The presolo period of training involves many routine procedures such as line-checking, getting into the plane, starting the engine, warming up, taxiing, making the preflight check, taking off, flying the pattern, landing, etc. Each of these phases of flight in turn consists of details. Most of these routine procedures can be reduced to habit. If a pilot always had to stop and think of each individual action, he would have an almost impossible job, for his mind would not be free to handle irregularities of traffic or the other non-routine aspects of flight.

Reducing all routine flight activities to "habit" is one of the basic principles of safe flying. It is this principle which we will want to master during the presolo period of our training.

There is one further point to consider before beginning our program of habit formation. When the proper precaution is known and applied to a hazardous situation, that hazard becomes a "pilot responsibility." For example, taking off with an inadequate fuel supply is often done by careless pilots and this possibility constitutes a hazard. The simple and customary precaution against running out of fuel is to visually check the supply in the tank prior to take-off. When the pilot takes this precaution and fills the tank, the hazard no longer exists. The good practice in this case is always to check the fuel supply.

Safe flying in the presolo period of training is a matter of making habits of all the known good practices. This can best be achieved through use of "check lists."

Ground Safety Practices

Safe flying begins even with the way we approach our airplane. More severe and expensive airplane accidents happen on the ground than in the air. Pilots are less cautious in taxiing than when in the air. "Bad ground practices" often lead to later accidents while in flight. Learning the things to be careful about on the ground is elementary but nevertheless important. There are several "good practices" which, when properly observed, prevent mishaps. First, to make a part of your flying is the "line check."

The Line Check. Practiced by most responsible pilots, line-checking includes a brief but careful inspection of the airplane prior to flight. Although the airplanes used for instructional purposes are usually "line-checked" and "serviced" prior to our using them, we should as a matter of good practice learn to line-check and service the plane. Sooner or later that will become our responsibility, too.

Damage sufficient to make the airplane unairworthy sometimes occurs on the ground and in the hangar. A walk around the plane prior to getting into it will reveal the condition of tires, shock struts, fabric, etc. Taking hold of the control surface may reveal wear or damage, running the hands along the propeller blades and making a visual examination of the rivets in the tipping will show the general propeller condition. Frequent cleaning of the sediment bulb is essential to safe flight, as water can enter

An early understanding of the basic principles of safe flying will eliminate most of the presolo flight hazards and form a sound foundation for happy flying. First of a series of articles written for the private pilot on the various stages of flight training and cross-country flying.

By ROCKY BANCROFT
Former Chief Accident Reports Writer for the Civil Aeronautics Board, Safety Bureau.

the fuel system through condensation within the tank or be taken into the tank with the fuel.

1. *Observe tires for inflation and general airworthy condition.*
2. *See that shock olios are up.*
3. *Observe fabric for tears or wrinkles.*
4. *Examine propeller blades for nicks and tips for looseness.*
5. *Test control surfaces for loose hinges or damage.*
6. *Clean fuel sediment bowl.*

Entering the Plane. The only dangerous part of an airplane is its propeller. The propeller is such a serious hazard that it is sometimes called the revolving "guillotine." If the airplane is always approached from behind the wing and the pilot and passengers enplane and deplane from the rear of the wing struts, the propeller hazard will be largely eliminated. This is a good safe habit to establish with the first lesson.

There have been both humorous and tragic results of students forgetting to fasten their safety belts. If you will immediately fasten your safety belt upon enplaning, a sudden gust of air, opening of the throttle, or collision with another object will not throw you against the structure. Also there will be no possibility of your taking off with an unfastented seat belt.

Making sure that the switch is "OFF," the gas is "ON," and the throttle is "CLOSED" immediately after fastening the safety belt, is the next responsibility of the pilot after entering the plane.

1. *Approach plane from rear of wing.*
2. *Enplane from behind the wing struts.*
3. *Fasten seat belt immediately on enplaning.*
4. *Make sure switch is "OFF," gas "ON," throttle "CLOSED."*

Starting the Engine. Airplanes have run away while being started—one even took off by itself, flew one-half mile and crashed, when it was started without an experienced person at the controls. In addition to having a competent person at the throttle, chocks should always be placed at the wheels. The hand throttles of automobiles in the early days pulled toward the driver when advanced, the dash throttles of automobiles still do this, as do the throttles of tractors and many other machines. It is easy to inadvertently open the throttle too far, push it open instead of closed or allow it to creep open. Each of these throttle hazards causes a number of accidents each year. You may need to drill yourself considerably to get used to the forward motion to advance and the rearward motion to retard the throttle.

As a precaution against propeller injury while starting the engine, the following verbal procedure will help prevent confusion. When "CONTACT" is called for, always say "contact" and *then turn the switch on.* When "OFF" is called for, always *turn the switch off* and then say "off."

When the engine starts, observe if the oil pressure comes up to or above normal. (Normal temperatures and RPM's are specified by the manufacturer and should be followed carefully. Determine the proper specification for your plane.) If pressure does not come up at once, turn the switch off immediately and investigate the trouble. Open the throttle gradually to the proper "warm-up" RPM (a sudden opening of the throttle throws unnecessary stresses on the engine). When the oil has reached the normal take-off temperature, check the engine for maximum RPM. Next, the magnetos should be checked separately. If there is a drop of more than 100 RPM, the engine should be examined by a mechanic. If the engine is being started for the first time or has been idle for several hours, the oil may drain to the low cylinder. Before starting, pull the prop through several times with the switch off. Engine warm-up should be done on a clean concrete surface to avoid dirt being sucked into the carburetor and small pebbles nicking the propeller. Tail the airplane so as to avoid blowing dirt into the hangar and the office. Also tail the airplane away from other planes. The slip

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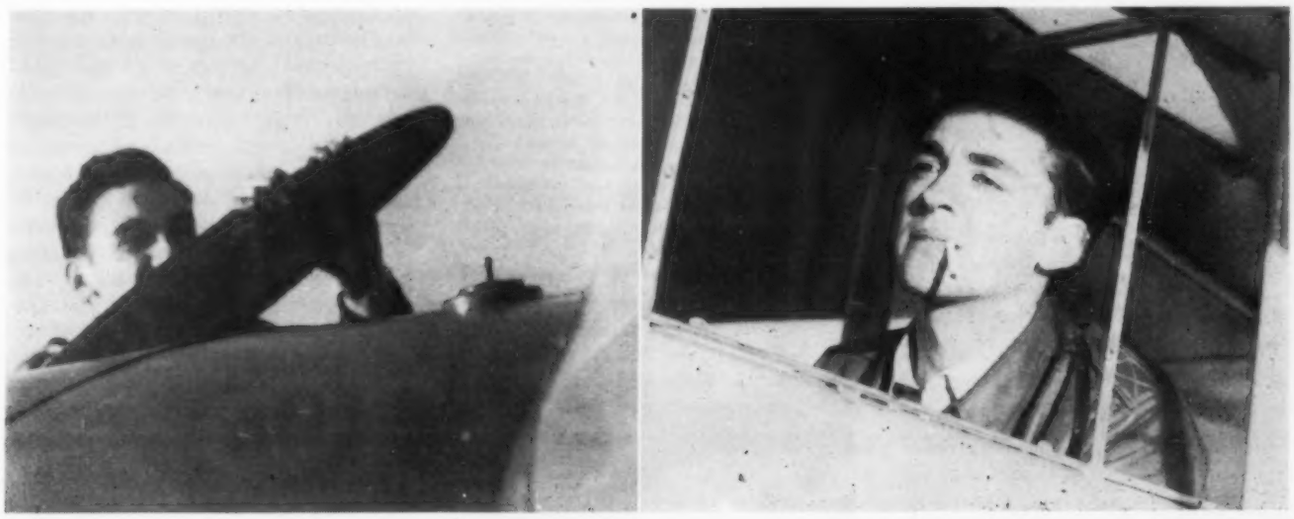


Blissfully unaware of the fuel indicator, which registers "empty," the pilot prepares to start his engine (left). A careful line check would have prevented the forced landing that is bound to occur. Right, smoking near an airplane is dangerous, but when you light up in the cockpit before take-off, you are really asking for trouble.

Non-Scheduled Aviation's

Partnership for Progress

Closer ties between 4th Region operators and CAA were effected at Fort Worth when regulatory matters, GI Bill of Rights training and airport muddling came up for consideration

THE unwritten but totally effective "partnership" agreement between CAA field personnel and airport service operators in the Southwest was renewed with unanimity last month on occasion of the second annual Fourth Region Non-Scheduled Operators Conference at Fort Worth, February 25, 26, and 27. The conference was sponsored jointly by Fourth Region CAA headquarters and SOUTHERN FLIGHT. More than 250 operators and CAA field personnel attended the three-day meeting.

The highly individualistic conference, characterized by informal and often colorful discussions from the floor, devoted most of the allotted time to regulatory matters. Emphasis was placed on proposed Part 42 of Civil Air Regulations and the program now under way to appoint thousands of qualified mechanics as aircraft maintenance inspectors in order to relieve the now over-burdened CAA general inspection personnel. Other subjects included qualifications necessary for these inspectors, creation of a new grade of mechanic certificate, and the national airport and hangar situation with special emphasis on airport zoning, landing fees and restrictive airport policies being established by certain municipalities in the Southwest. Mechanic and pilot training possibilities under the revised GI Bill of Rights also received top billing as did feeder lines, surplus aircraft disposal, air safety problems, improvement in airport service to private owners and necessary revisions of present Federal Communications Commission regulations covering the licensing of pilots and aircraft stations.

Part 42 Revision Urged

Although most of the conference registrants expressed a desire that no new regulations covering non-scheduled operations be established at this time, it was generally admitted that some form of safety regulation and certification would be adopted in the near future by the Civil Aeronautics Board. As a consequence, the Conference appointed a special committee to revise proposed Part 42 of CAR and their suggestions were adopted by the operators. The following wire was sent to all five members of the Board with a copy to CAA Administrator T. P. Wright:

"We earnestly protest proposed Civil Air Regulation Part 42 as now written. We have spent three days of intensive study and discussion of proposed Civil Air Regulation Part 42 on occasion of Annual Fourth Region Non-Scheduled Operators Conference, resulting in majority agreement on various changes and suggestions which are being forwarded to you today. We respectfully urge the Civil Aeronautics Board to give serious consideration to our suggestions in view of fact we represent the non-scheduled operators of Texas, Oklahoma, Arkansas, New Mexico and Louisiana, and are confident we reflect the attitude and opinion of non-scheduled operators all over the nation."

Needless to say, the operators took most of the "heat" out of the original Part 42 proposal in order to provide for certification of all charter or air taxi carriers yet not impose new regulations that would destroy or impair present operations. Copies of the suggested revisions were mailed to the five CAB members and to Administrator Wright.

Among leaders at Conference were Arthur I. Boreman of Des Moines (above), chairman of the CAA's Non-scheduled Aviation Advisory Committee, and (below) William M. Berry, 4th Region CAA Assistant Administrator for Private Flying Development, and L. B. Littrell of Kansas City, who holds the same CAA post for the 5th Region. Additional photos of participants are on page 56 of this issue.
—(SOUTHERN FLIGHT Photos)

New Mechanic's Rating Asked

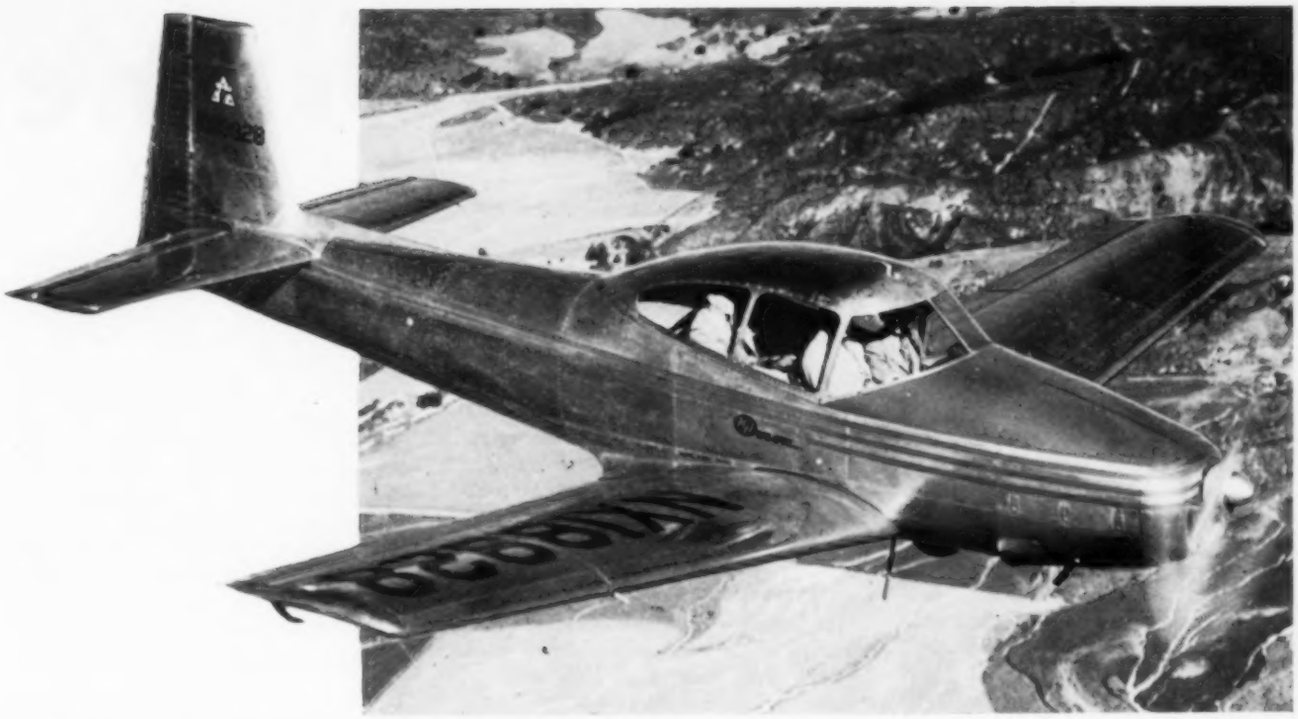
One of the most time-consuming yet spirited discussions revolved around the creation of a new type of mechanic certificate and the qualifications a mechanic should have in order to become a designated aircraft maintenance inspector. The group voted unanimously on the following points:

1. A new grade of mechanic license should be created one step below the present Aircraft and Engine mechanic which would be the first step a prospective A & E would take in starting on his career to secure an A & E certificate. This could be achieved under existing regulations by amending Section 24.2 of CAR Part 24 by adding:

A. LINE MECHANIC RATING.

B. AERONAUTICAL EXPERIENCE.

Applicant shall have had at least six months of practical experience or such experience deemed by the Administrator to be equivalent in the inspection, maintenance or repair of air-



FIRST PHOTO OF NORTH AMERICAN AVIATION'S "NAVION" shows wing and empennage resemblance to P-51 Mustang. Four-place Navion is of all-metal construction, is powered by 185-hp. Continental and is expected to develop 152-mph. cruising speed. Other details, including price (proposed at $5,000 or less if produced in large quantities), production and marketing plans, and construction details have not been announced. Note roomy cabin, streamlined cowling.
—(North American Aviation Photo.)

craft, aircraft engines and accessories.

C. Aeronautical Knowledge and Skill.

Applicant shall satisfactorily demonstrate by means of written, oral and practical tests his ability with respect to his privileges and limitations.

D. Limitations of Line Mechanic.

The holder of a Line Mechanic rating shall be limited to the line inspection and maintenance of aircraft, aircraft engines and accessories. He is limited to the performance of minor alterations and minor repairs which will not include major overhauls of aircraft, engines or accessories. Holder must have available and employ all manuals and bulletins covering makes and types of equipment upon which he performs mechanical work.

2. Upon presentation of evidence of satisfactory completion of required written examinations, the oral and practical tests required for issuance of all mechanic certificates and ratings may be given by any designated aircraft maintenance inspector or by any approved mechanics school.

3. No changes should be made in the existing A & E certificate requirements. In larger centers of population where the volume of work warrants specialized mechanics according to trades it is not necessary to have specialist ratings, while in smaller communities the specialists would not be available. The administration and paper work required to re-examine all existing A & E mechanics for specialist ratings would present an insurmountable problem.

4. Applicants for designated aircraft maintenance inspectors should have a minimum of three years of continuous experience in the repair, maintenance, inspection and overhaul of aircraft, engines and accessories and hold a mechanics certificate with an Airplane and Engine Rating.

Vast GI Training Potential

A thorough question and answer session on the GI Bill of Rights revealed that the mechanic and flight training possibilities under the Bill might produce a national training program even larger than the old CPT and WTS programs. Veterans Administration Form 1950-A now permits the GI to take concentrated training in one 12-month period instead of requiring the tuition expenditure of $500 per year to run over a four-year period. Training school must be approved by the local Veterans Administration office in each region. It was brought out that some regions require CAA school approval while other Veteran Administration offices do not require air agency certificates. However, CAA officials stated there have been no changes in the awarding of air agency certificates, and that all operations needing certification should apply immediately.

Radio Red Tape Hit

The group urged that FCC revise its regulations covering aircraft radio and that a simple examination in radiotelephone procedure be included in the written examination for pilot certificate. Any holder of a pilot certificate should be deemed qualified to hold a Third Class radiotelephone operator license. A strong recommendation was voiced for aircraft transmitters to be licensed with the airplane and that the license should remain in force as long as the airplane is registered in the continental limits of the United States. In addition, the group suggested that the FCC permit any First Class operator be permitted to run frequency checks, make inspections and restore any aircraft station to service. These changes in FCC rules would eliminate a maze of red tape and facilitate handling of radio licenses during the contemplated upsurge in private flying.

On the matter of feeder airline development, the conference urged that Congress adopt Jennings Randolph's concurrent resolution (No. 25 in the Senate and No. 64 in the House) dealing with the policy-making provision of establishing feeder airline transportation throughout the United States. The concurrent resolutions would

(Continued on page 33)

Trainer

I PROBABLY can't tell you much that you don't already know about the flight characteristics of airplanes like the Stearman, Howard, Ryan, or Fairchild primary trainers, but I can tell you what I think of the future of these airplanes in civilian flying. My opinions may be wrong, but the facts on which my opinions are based may enable some of the newcomers in aviation to make up their own minds more intelligently.

The most popular dream of war-trained pilots is a job with the airlines. Next in popularity is the purchase of a Stearman or a Fairchild with somewhat vague ideas of renting it out and selling instruction. Although the airplane is better, the pattern is the same as after World War I when pilots found outlet for their urge to fly by buying surplus Jennies for barnstorming, or what have you.

As far as I know, none of these old-timers got rich—or even made a comfortable living—until they gave up barnstorming and branched out with the industry into airlines, manufacturing, schools, and fixed-base operations. Fixed-base operation continued to be a labor of love rather than profit because the market for what they had to sell was small and the price at which they had to sell it was large.

Will History Repeat Itself?

The Jenny was consigned to oblivion with the coming of law and order in the form of the Air Commerce Act of 1926. The following spring, the world woke up to the fact that someone was trying to go somewhere in an airplane—some ordinary guy who had bought an airplane in San Diego, hopped to New York with hardly any fan-fare and now had started out for Paris. The world held its breath until the following day he landed—at the very place he intended to land, too. People began to realize that the airplane was more than an amusement park device that gave you breath-taking thrills but left you right where you started.

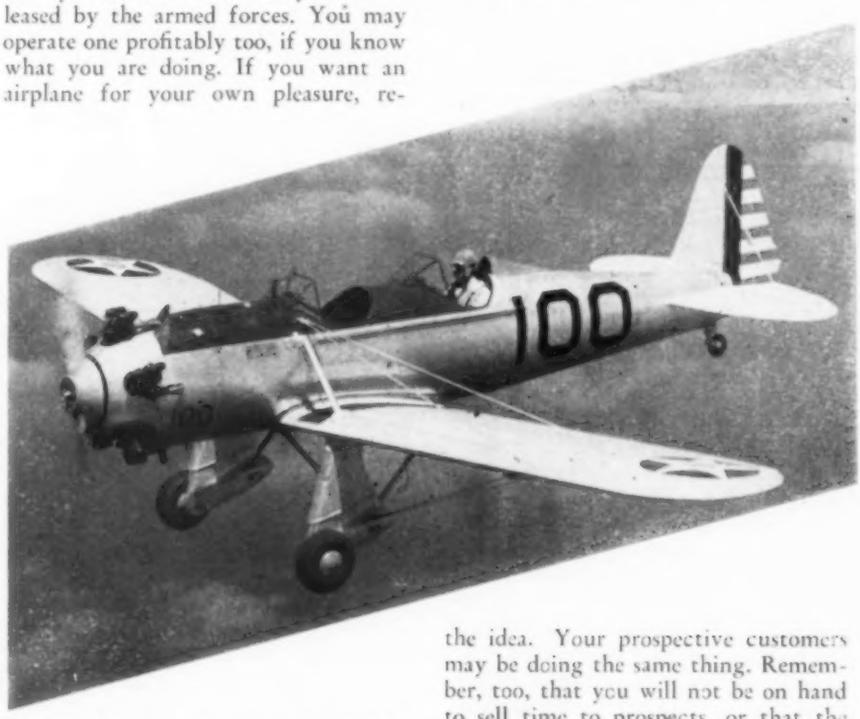
A point frequently overlooked is that Lindbergh made his trip in an airplane that did not require him to wear helmet and goggles, and which could be sold at a price some business organizations or individuals could afford to pay. When power-gliders grew up into lightplanes, the fixed-base operator had something he could sell to an individual of moderate means, something the individual could afford to fly.

The Swallows, the Lincoln-Paige, the Birds, the Great Lakes and even the Waco F's were eating up overhead in the hangar waiting for customers who would pay $10 an hour or more, while the Aeroncas, Cubs, Taylorcrafts, Rearwins, Porterfields and Curtiss, Jr.'s, were paying their way. By 1939 the only big open-cockpit airplane being produced in considerable quantity was the Stearman whose only customers were the Army and Navy which needed this type of airplane to teach acrobatics.

As I have pointed out, they were obsolete for civilian purposes before the war. If there is a difference in degree of obsolescence, they will be more obsolete when the new civilian designs get into production. The old-timers went broke operating Jennies when there was no better airplane available. How can you expect to do better with an airplane which is a little stronger and more powerful but costs more to operate, when you will have to compete with airplanes designed especially for the civilian market?

Horsepower Costs Money

It is true that many operators have bought these trainers and have made money with them since they were released by the armed forces. You may operate one profitably too, if you know what you are doing. If you want an airplane for your own pleasure, remember that one of these trainers will cost you about one dollar in actual cash each ten minutes you fly it. That does not include hangar rent, which you must pay for whether you fly or not; it does not include depreciation, which you do not realize you are paying until you try to resell the ship; nor does it include insurance which you may or may not carry.



RYAN PT-22 can be operated profitably if you watch all costs and keep it busy.

First, figure how much you can afford to spend just for pleasure every week. Divide that by $6 and multiply by 52 to find out how many hours a year you will get to fly. Now figure your yearly hangar rent and add depreciation (about one-fourth of what you paid for the airplane); then divide by the number of hours per year you figured you could fly. Add this to the $6 per hour you pay out in cash, and you will see what your flying is going to cost you. This figure still does not include insurance, if you carry it, or the cost of a possible accident.

Perhaps you figure you can pay part of the cost by renting your airplane out to others like yourself who want to keep their hand in. But don't forget that you don't have any monopoly on the idea. Your prospective customers may be doing the same thing. Remember, too, that you will not be on hand to sell time to prospects, or that the time when you are free to take a joy-ride will be the same time that your customers are free to rent it.

If you can make a deal with a trustworthy operator who does not have a plane of this type himself, you may be able to pay expenses. You must expect, however, that he will sell customers on his own equipment first and use yours to hold the customers who insist on flying that particular kind of plane.

The operators who have been making money on surplus military training aircraft have not had all their eggs in one basket. They already had a profitable flying business. The demand for acrobatic flying had been stimu-

n Mufti

By A. H. KNOUFF

STEARMAN PT-17 is ideal for acrobatics and a fine plane if you can afford to fly for fun.

lated by CPT and military pilot training. Since the business they already had was paying for their hangar, mechanical facilities, and salaries, the purchase of a Stearman or Ryan would not materially increase their overhead. Because they buy their fuel, oil and parts wholesale and do their own maintenance, their contingent expenses will be less than yours. They are also located in communities where the small proportion of prospects who want acrobatic flying is large enough numerically to make it worth the operator's while to provide for them.

Most Customers Want Economy

If you want to get started in the flying business and can afford only one airplane, you should look for one that offers the greatest sources of revenue and appeals to the largest part of the market. The business man will not hire your Stearman for a trip, when he can hire another in which he can ride comfortably without soiling or wrinkling his regular clothes. You can't even offer him speed or range as compensation for discomfort and inconvenience. At the price you will have to ask, he can get a plane that will fly farther and faster, and in which he can take his wife and children along if he wants to. He can get in a commercial model and be on his way while you are still getting into your flying clothes.

You can't use your acrobatic trainer as a demonstrator. You have nothing to sell but the airplane you are demonstrating. You can't order one for him from the factory and take your commission. You will not find many who are willing to pay $8,000 for an airplane like this anyway.

Sure, you can teach people to fly. But how many will pay you $15 to $20 an hour for lessons when they can learn just as well in an Aeronca for $8 or less?

Like the roller coaster, military trainers leave you right where you started. The only thing they are good for is acrobatic flying. Prospects for this kind of flying are limited in number, and soon get tired of it. You may be surprised how soon you yourself will weary of "thrill" flying and want to get an airplane that will take you places in comfort.

Sometimes it appears that surplus military trainers are offered at prices less than the engines alone are worth. This sounds suspicious. There are enough operators and private owners using airplanes with these engines that any real bargains like this should be snapped up in a hurry. The obvious answer is that such operators already have snapped up all of such bargains that they can use. These airplanes may be bought for less than the prewar price of a new engine, but could you sell it for any more than you paid for it? After the last war, the government disposed of brand new OX engines for scrap prices. But no one, to my personal knowledge, got rich buying and selling them.

FAIRCHILD PT-19. Whether you buy this or any other trainer, take an experienced hand along to look it over before you buy.

However, if you can afford to fly a Stearman just for fun, or if you are in a position to use it profitably in commercial operations, you might be wise to get two and dismantle one for a spare engine and replacement parts. Thus you might avoid some long delays during which you could get neither pleasure nor profit from your investment.

If you are an experienced operator, you can and will estimate how much it will cost to repair and license the airplane you are planning to buy. If you are not an experienced operator, take an old hand along to look it over before you buy. Otherwise, you may find that the price you pay is much higher than the tag.

One thing that even some experienced operators may not know is that in certain cases, military aircraft and engines which have been reconditioned are considered new and the logbooks show only the time since reconditioning. In such instances there is no way you can learn the past history of the plane or engine.

If I seem unduly pessimistic, it is because I have advised so many newcomers to buy a good used lightplane for say $800 and had them go out and buy a big airplane for the same price because it looked like more for the money. Unless you have already learned the hard way, I fully expect you to do the same. ★ ★ ★

Wrong way to start an airplane. Should the prop catch unexpectedly, this fellow would lose a leg—his head is turned and his attention is not on what he is doing.

SAFETY BEFORE SOLO

(Continued from page 27)

stream may severely damage the controls of another plane should they be unlocked.

1. *Competent person at controls.*
2. *Wheels chocked.*
3. *If engine has been idle for several hours, pull propeller through by hand a few times.*
4. *Say "CONTACT" before turning on switch. Turn switch off before saying "OFF."*
5. *Retard throttle by "pulling back."*
6. *Observe if pressure comes up.*
7. *Warm at ____ RPM.*
8. *Check RPM on each magneto.*
9. *Check maximum ground RPM when temperature reaches operating normal.*

Taxiing. Many amateur pilots do not realize the difficulty involved in safe taxiing due to the poor visibility and ground control of most modern airplanes. The presence of holes and soft spots in taxi strips, loose objects, other airplanes, gas trucks, grass mowers, people, dogs, and even the hangar creates a situation of potential hazard for the pilot. "S" turning gives full forward vision and should be practiced liberally by beginning pilots.

Good taxi practice calls for a speed which gives adequate control of the airplane at all times. Pilots have learned that *coming to a full stop* and then applying only the necessary amount of throttle is the proper way to taxi up to the gas pit or hangar or other airplanes.

Because some careless pilot occasionally takes off or lands on a cross runway, it's good practice to look toward each approach before crossing.

Cautious pilots, upon reaching the take-off position, make their turns in such a manner as to get full vision of the approaching traffic. If the pattern is of the usual left-hand type and the airplane has been taxied down the left side of the runway, a 180 degree right turn onto the runway will provide a full view of the traffic. If, however, you have taxied down the right side of the runway, it will be necessary to cross over the runway then make the 180-degree right turn which also permits a full view of incoming traffic.

1. *Observe obstructions, other airplanes, etc., before entering plane.*
2. *"S" turn while taxiing to clear blind areas.*
3. *Call tower for taxiing clearance.*
4. *Taxi slowly enough to maintain full control.*
5. *Come to full stop before approaching close to obstructions.*
6. *Look toward both approaches before crossing a runway.*
7. *Cross over the runway when necessary to get a full view of incoming traffic.*

A slip here and this pilot would be decapitated by a knife-edged propeller. Always enplane and deplane from behind the wing on conventional airplanes.

Pre-Take-Off Procedure. The pre-take-off procedure involves a series of very important precautionary checks. Can you imagine pilots being so careless as to take off with the controls locked, or with loose objects in the plane such as cushions, parachutes, baggage or even mechanic's tools which have not been properly secured? Even if the magnetos have been checked during the warm-up, they should be rechecked before take-off. A very slight miss on take-off can develop into a bad case of detonation or some other type of failure. Make it a habit never to take off with even a slight degree of malfunctioning.

Until the engine has reached its normal running temperature the valve timing will be off, the compression weak and the lubrication inadequate. For these reasons, taking off with a partially cold engine can result in a loss of as much as 25 per cent of the normal horsepower.

1. *Test the flight controls for freedom of movement and range of travel.*
2. *Check each magneto at manufacturer's specified RPM.*
3. *Make sure that engine temperature and pressure are within the operating range.*
4. *Call tower for take-off clearance.*
5. *Check carburetor heat position (unless carburetor icing is known to exist, always take off with carburetor in cold position).*
6. *Make final visual check of incoming traffic and runway clearance.*

Safety Practices in Flight

You might wonder why your instructor is so insistent on your keeping accurately lined up with the runway while climbing to the first turn in the pattern. Precision accuracy, as a habit, is important to good flying.

The habit of continually moving the head and eyes to observe for traffic can start with the take-off run. A quick look to each side before reaching cross runways is good practice, just in case someone is taking off in the wrong direction.

During the climb to the first turn is a good time to observe for other airplanes which might be approaching irregularly for a landing. Try to make it an accurate 90-degree turn and then hold a "straight course" to the next turn. (To make an accurate 90-degree turn, pick a point in line with the wing tip and turn directly to it.) While flying the cross wind leg is a good time to spot other pilots who may be planning to enter the pattern. While flying the down wind leg, continue to watch for traffic entering the pattern. This is also the best time to check the wind sock, the ground traffic and to note the position of other planes ahead of you in the pattern. A glance down wind will reveal any large or faster plane that may be making a long, low approach.

Take-off Leg

1. *Look for traffic on cross runways.*
2. *Maintain straight course during climb.*
3. *Look for irregularly approaching traffic.*

4. *Plan ahead for the turn and cross wind course.*

Cross Wind Leg

1. *Spot all other planes about to enter the traffic pattern on the down wind leg.*
2. *Plan ahead for the turn and down wind course.*

Down Wind Leg

1. *Check the wind sock.*
2. *Observe ground traffic.*
3. *Observe planes entering traffic.*
4. *Observe for other planes in the pattern.*
5. *Check carburetor heat position.*
6. *Plan ahead the turn and base leg course.*

Base Leg

1. *Keep other planes ahead in pattern in view.*
2. *Observe for planes making a long, low approach.*
3. *Clear engine every 20 seconds.*
4. *Obtain landing clearances from tower.*
5. *Plan ahead the turn and final approach course.*

Final Approach

1. *Clear engine every 20 seconds.*
2. *Lower flaps.*
3. *Observe if runway is clear of traffic.*
4. *Keep ample distance behind other planes.*
5. *Observe for planes which might be cutting pattern short.*
6. *Plan ahead touch down and turn from runway.*

Summarizing: The routine elements of your flying will be automatically covered if you reduce them to well-formed habits. Make up your own check-lists of each procedure. The check-lists suggested here are general. With the help of your instructor revise them to fit the type of airplane you are flying and the procedures he wishes you to follow. Drill yourself prior to each flight lesson on the proper check-list until you can mentally take yourself through each of the routine procedures. When these procedures become automatic, you have mastered the first important, basic principle of safe flying.

(Next Month: Safe flying from solo through private license.)

★ ★ ★

PARTNERSHIPS

(Continued from page 29)

serve as a mandate from Congress to the Civil Aeronautics Board to proceed with the immediate establishment of feeder systems throughout the nation, affording many cities and communities adequate air service.

City Hall Airports Criticized

A large number of southwestern municipalities came in for bitter criticism with reference to administration of municipal airports. The high-handed policies of city officials in San Antonio, who are now in the process of turning over to the airlines the facilities now being used by non-scheduled operators, were roundly condemned. The Conference also went on record against landing fees and the restriction of public-owned airport to any one kind of flight operation. By majority vote, the uniform airport zoning act was recommended to the various state aviation commissions for immediate adoption to protect all airport approaches.

Next Meeting in January

Co-chairmen William Berry, Fourth Region Assistant Administrator in charge of private flying development, and George Haddaway, editor of SOUTHERN FLIGHT, set up the three-day program on the basis of requests from operators and CAA field men prior to the conference. The same procedure was followed last year and guaranteed discussion of subjects in order of importance to the operators. Jack Jaynes, Assistant CAA Administrator of the Fourth Region, represented L. C. Elliott, regional administrator, who had to be in Washington for a regional administrators' meeting. Discussion leaders included M. F. Clark, Wesley Brubaker, George Rand and Ed Travis of the CAA. Merrill Armour, CAB counsel from Washington, represented the Civil Aeronautics Board and contributed materially to the success of the conference.

Two members of the Non-Scheduled Advisory Committee attended the sessions. Art Boreman, chairman, and Edward Garbacz, Fourth Region member of the committee, detailed the work and accomplishments of their group, which serves in an advisory capacity on non-scheduled aviation matters to T. P. Wright, CAA Administrator. Boreman made the principal address at the annual conference banquet and called for support of a national campaign to encourage every one of the 16,000 incorporated towns in the U. S. to obtain adjacent landing fields—the first "dirt roads" of aviation. He also outlined plans for a national air marking program.

According to Conference sponsors, the 1947 sessions will be held in Fort Worth early in January. ★ ★ ★

MEXICO

(Continued from page 24)

had used the money to pay his helpers. The fuselage and wings were so badly scraped and torn by the rough handling that more damage was done in the truck than in the actual smashup. The wreckage was delivered to the Mexico City airport for repairs which I learned would take more time waiting than I could afford. I returned to Chicago by airline.

Suggests Better Route

In retrospect, I am willing to admit that I want to make this trip again and feel that the experiences which I have described will be helpful to anyone contemplating a similar journey. I spoke to various pilots in Mexico, men who fly over the mountains day after day, and I was told that the route I took from Monterrey, via Saltillo and San Luis Potosi, was the worst possible one.

In returning to Chicago by airline I watched the terrain and decided that the best route is the one which skirts along Pachut, Tulancingo, and then north through comparatively low country past Huetjutla, Tempoal, El Higo, Victoria, and Montomorelos to Monterrey. This would give one 50 miles of mountain flying after which he would skirt the mountains and keep them on the left all the way to Monterrey. It would offer shorter hops and more opportunities for emergency landings.

I would also advise against making the trip between June and September, for this is the rainy season in Mexico and apt to be the most dangerous time of the year for flying. As to equipment, I would recommend a two-way radio, a magnetic and gyro compass, a flashlight and ample tie-down supplies.

Remember not to start too early in the day unless you want to fly through clouds which may have a mountain as a core, and not to fly too late because sundown comes early in the mountains.

Expenses for the airplane, including gasoline, oil, clearances, gratuities, guard's pay and interpreter's fees, amounted to $79.90 for the trip. Dividing this by two, the trip cost us $40 each, aside from rooms and food. I spent approximately $48 for lodgings and meals during the seven days.

One need not know how to speak Spanish, but take my word for it, a knowledge of the language is exceedingly helpful. In the larger towns one can always find a waiter or someone who speaks English, but in the smaller communities it is something else again. *Hasta Mañana!* ★ ★ ★

Single-seater Roteron has 25-hp. engine placed between two sets of blades. Designed by William H. Thomas, president of the Roteron Corporation, aircraft weighs only 400 lbs., has tricycle landing gear, is powered by 5-cylinder Nobel engine.

Logging the Coast

By.. Midge Winters

TWO more helicopters appeared in untested, prototype form this month, bringing Southern California's total **known** number up to an even half dozen. (From indications, there may be some half dozen still under wraps in the backyard garages of Los Angeles and vicinity.)

The two new 'copters are the T/G Sunbeam, twenty-nine foot tandem rotor job built by Rotocraft, and the Roteron, fifteen-foot six-inch single rotor ship built by the Roteron Corp.

The Sunbeam was designed by R. T. Tiedje (pronounced T/G), well known Los Angeles aircraft tools manufacturer and head of Rotocraft, which has been three years developing the helicopter. With a streamlined mahogany plywood (six-ply) body, which measures about 60 inches through the middle, the Sunbeam probably best resembles the fuselage of a DC-3—cockpit and all—on a much smaller scale. Tandem rotors are fore and aft. Tiedje predicts that flight tests will prove the ship has exceptional directional stability and high speed. In addition, he says it has unique safety features, complete hydraulic fluid control, and precision of construction. The cockpit is built for a single pilot, and the cabin accommodates two to four passengers. Landing gear is conventional. Empty weight totals 1,800 lbs.

Midget Twin Rotor

Also about to take to the air is the Roteron, single-place, 25-hp. aircraft designed by William H. Thomas, president of the Roteron Corporation, who says that the ship is to be known as a "roteron" instead of a helicopter. This is news.

The first model of its kind, and designated "XM-1," the Roteron has a unique power transmission and power placement which puts it in a class by itself. The engine is placed between the two sets of blades istead of at the base of them, which, Thomas says, makes for manufacturing simplicity, with mechanical assembly all in one unit. In turn, this contributes toward an inexpensive model which was Thomas' chief aim in designing it.

"The Roteron will get down into a price field that is interesting to the public," he says, without actually divulging what cost will be.

A 25-hp., 5-cylinder Noble engine is used in the prototype, whose fuselage is of steel tubing frame, aluminum skin, and huge plastic windows which completely envelop the pilot from all sides except the rear. The Roteron has a tricycle landing gear. Its lower rotor blades are 7 ft. 8 in. long, and its upper blades, 4 ft. 10 in. The lower set has two blades, the upper, three. Gross dry weight is 400 pounds; rotor span, 15 ft. 6 in.; body length, 10 ft. 2 in.; height, 6 ft.; body width, 28 inches.

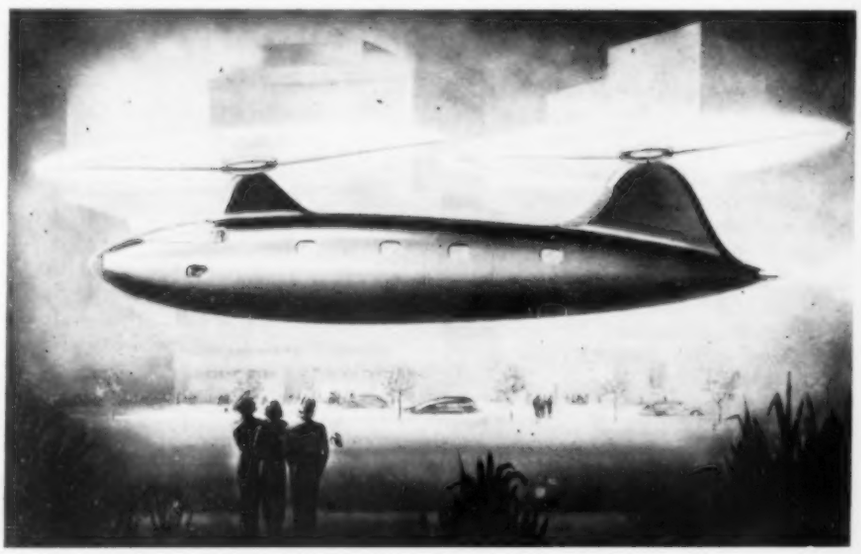
Flying Game Warden

Well, here's a new one. Lee Payne, managing editor of the Los Angeles "Daily News" and a member of the California State Fish and Game Commission, reports that a Fairchild has been the successful means of taking the census of animals — the four-legged variety.

Not only that, but the Fairchild has further proved itself in aiding and abetting law enforcement among violators of the fish and game code.

So, anybody who plans to jump the hunting season had better rein himself in, because there's a Fairchild lurking in the skies with a pilot who's just itching to use radio communications and report the violation. Same goes for fishermen who can't wait. Or, the fisherman who likes to play with an illegal net.

Prior to the war, the plane was used in experimenting with census-taking among large game and tracking down violators. It proved immediately successful, but purchase of the ship was forcibly put off by the war. Now the Fairchild is on permanent duty, assigned to various sections of the state as fish and game seasons are declared open or closed. ★ ★ ★



Sunbeam, Rotorcraft's twenty-nine foot tandem helicopter, accommodates pilot and two to four passengers, resembles small-scale DC-3 fuselage.

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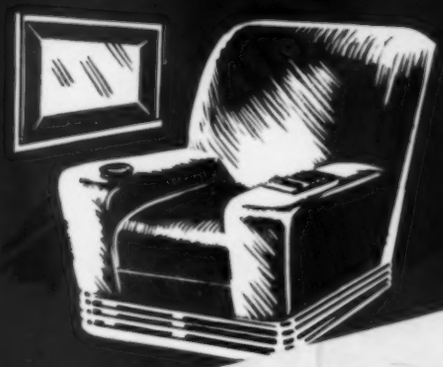
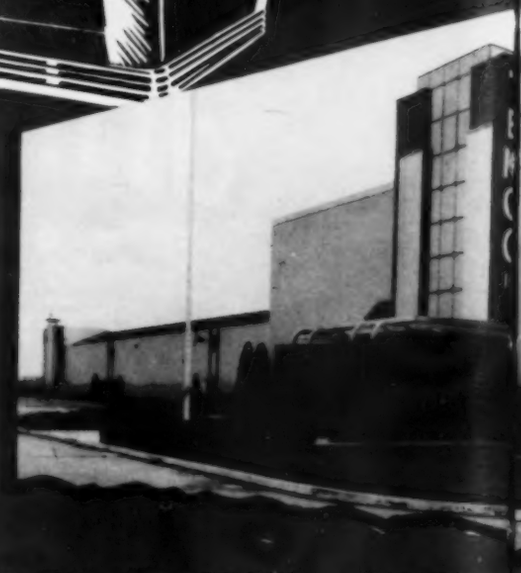
STANDARD AIRLINE INTERIOR

CUSTOM STATEROOM INTERIOR

BEECH INTERIOR VIEWED FROM COCKPIT



A-1



Texas Engineering and Manufacturing Company's facilities at the former North American Aviation plant, Grand Prairie, Texas — near Dallas. TEMCO offers the most modern tools and equipment available for ETCO modification of executive type aircraft.

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SKETCH A-3—Dressing room with dressing table, wash stand and toilet facilities.

All interior details, shown in these sketches, are reproductions from DC-3 or Beech aircraft already delivered by Executive Transport Company.

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Our factory-trained technical staff selects practically new military surplus Douglas and Beechcraft airplanes and modifies them to exacting specifications for Federal License under the supervision of Robert McCulloch, TEMCO president and former manager of North American Aviation plant at Grand Prairie, Texas.

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Added performance is given to the Luscombe Silveraire with the installation of a Model R002 Beechcraft Controllable Propeller. The blade length is 72 inches, the engine a Continental.

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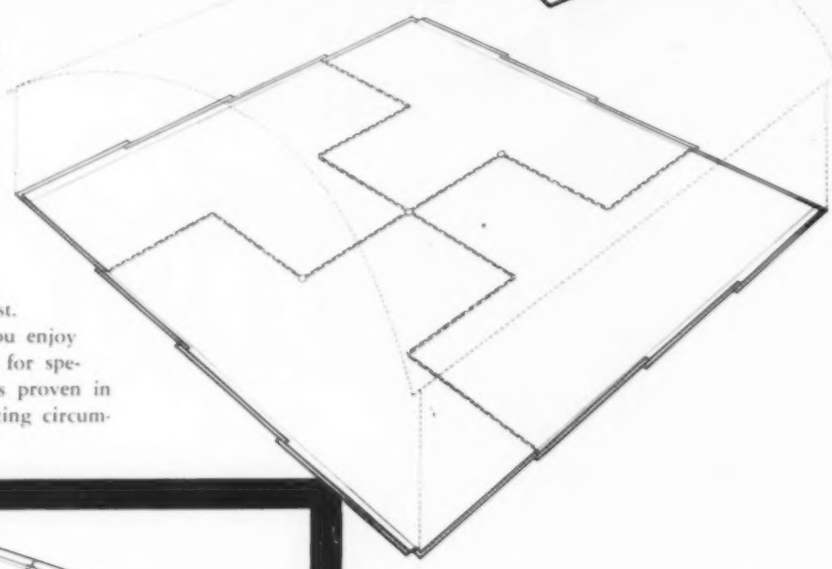
Economy · Durability · Flexibility

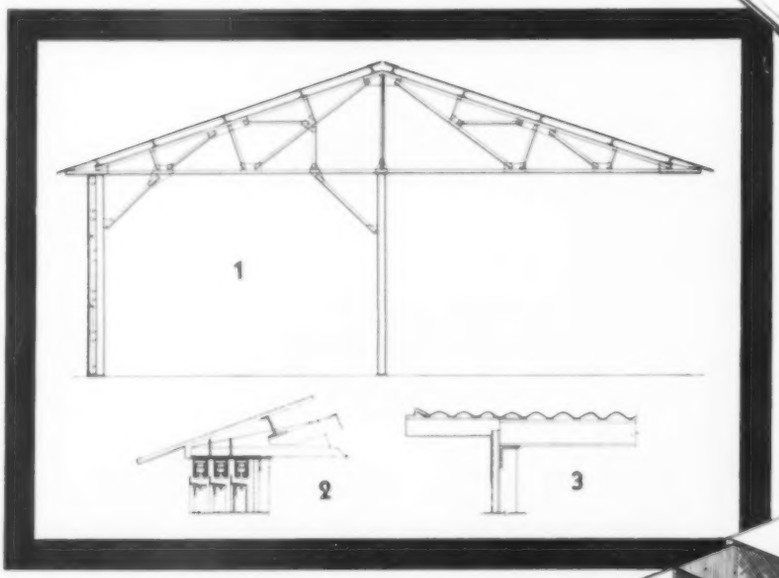
This particular Worry Bird was Vice-President in charge of headaches for airport planners and executives. Did a flourishing business, too—creating more hangar construction problems around the country than you could shake a "stick" at. But he was a smart Worry Bird—decided to take a back seat and stay there when this "Star" ascended into his heckler's heaven.

FIRST WITH THE FINEST

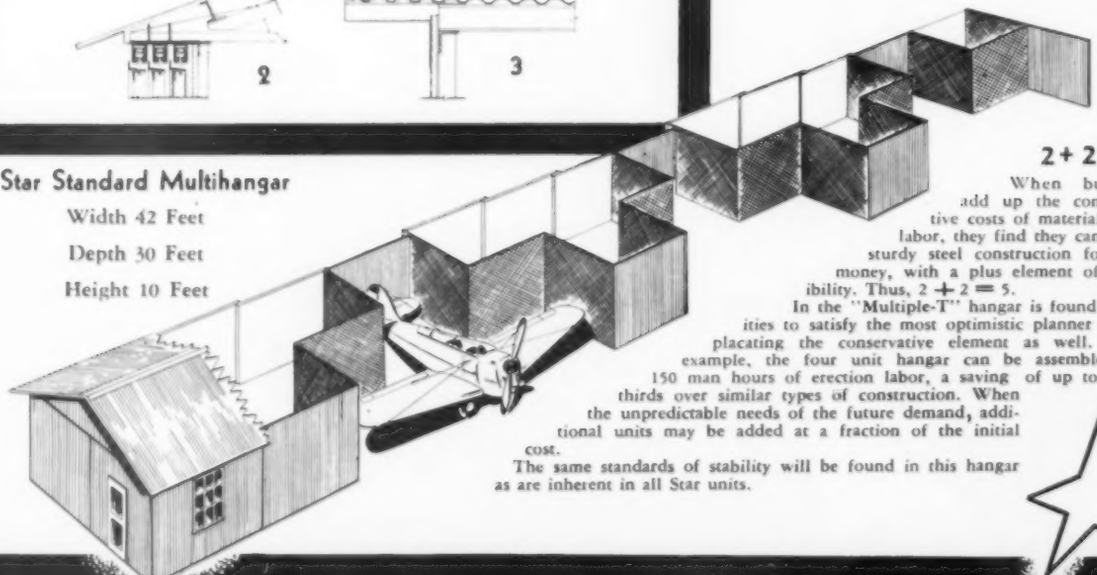
When you say, "It's best by far to depend on Star," you're not "Just whistling Dixie." Whatever or wherever the problem, Star has an answer—and a good one. A case in point is the small port shared by many air enthusiasts, where space is at a premium. To meet this situation Star designed the "Square-T" hangar. The "Square-T" reduces housing space by as much as 15%, provides simple yet rigid construction at unusually low cost.

Under the famous Star name you enjoy the advantages of specialized planning for specific needs, workmanship and materials proven in actual use and design dictated by existing circumstances.





1. Detail of special Star cantilever type truss with 4"—13.8 lb. per foot H Beam columns.
2. Detail of top hung sliding door.
3. Detail of eaves.



Star Standard Multihangar

Width 42 Feet

Depth 30 Feet

Height 10 Feet

2 + 2 = 5

When builders add up the comparative costs of materials and labor, they find they can have sturdy steel construction for less money, with a plus element of flexibility. Thus, 2 + 2 = 5.

In the "Multiple-T" hangar is found qualities to satisfy the most optimistic planner while placating the conservative element as well. For example, the four unit hangar can be assembled in 150 man hours of erection labor, a saving of up to two-thirds over similar types of construction. When the unpredictable needs of the future demand, additional units may be added at a fraction of the initial cost.

The same standards of stability will be found in this hangar as are inherent in all Star units.

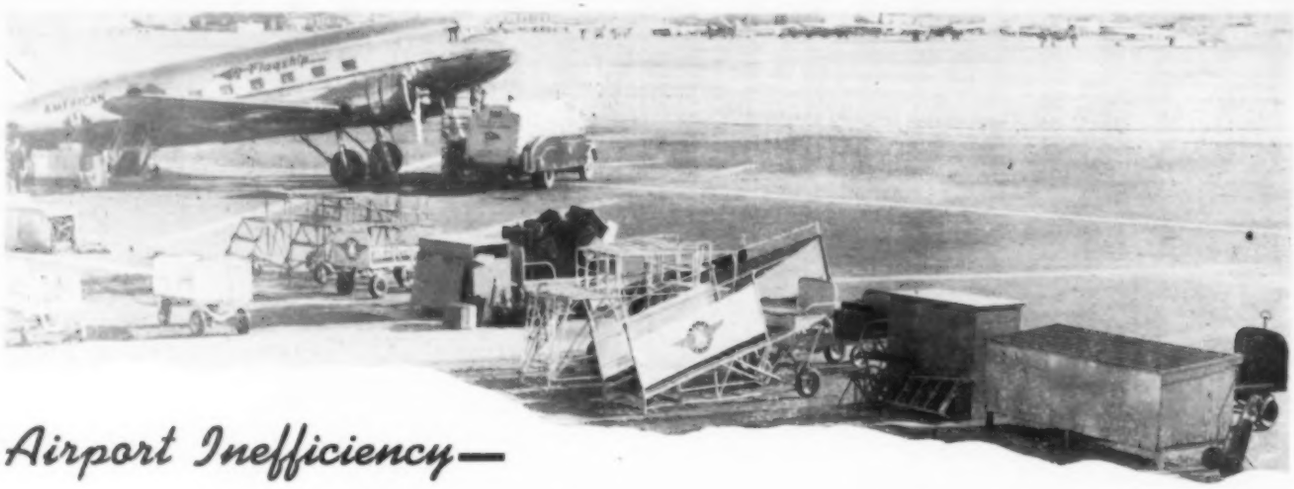
STAR MANUFACTURING COMPANY

3012 S. STILES OKLAHOMA CITY, OKLAHOMA

MODERN AIRPORTS

VOL. IV MARCH, 1946 NO. 1

Klotz Field, Luscombe Airplane Corporation's 700-acre turf airport, is located 15 miles northeast of Dallas, Texas. The CAA-designated field has a 5,000-ft. E/W strip and a 4,500-ft. N/S strip, and is used by Luscombe for flight-testing planes off the assembly line and for customer and dealer convenience when visiting the plant. The Luscombe factory, foreground, employs 700 workers, occupies 10 acres of the tract.



Airport Inefficiency—

Confused Cargo Facilities

Joint handling facilities for airline servicing would save ramp space, eliminate confusion, and reduce airline overhead.

By JOHN H. FREDERICK

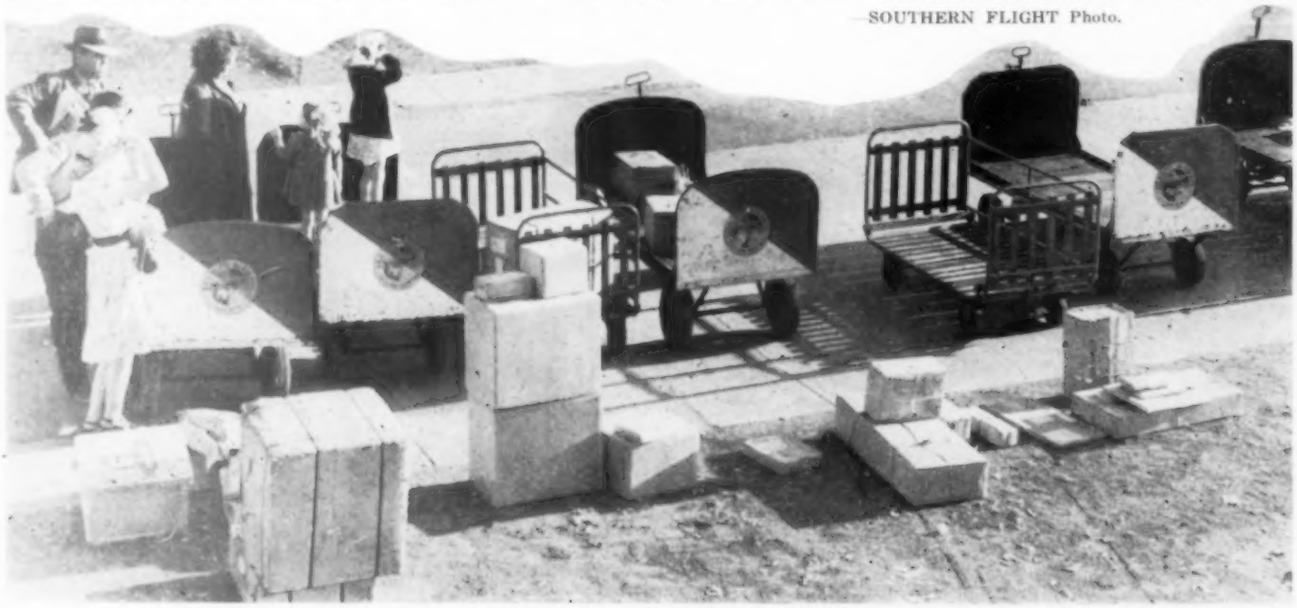
OUTSIDE the administration building of one of the busiest airports in the United States there are three flag poles. These are placed in three little grass plots between the ramp and the building where enplaning and deplaning passengers can see them. Flags flew from these poles for a short time after this administration building was opened a few years ago. Airline A had one pole. Airline B had one pole. Airline C had one pole. After a while Airline A forgot to put its flag up one day, or it became mislaid or something. Another day Airline A found its flag, and it again flapped in the breeze. But in the meantime, Airline B had lost its flag or forgot to put it up and Airline C decided it just wasn't worth the effort. So what happened? After a week or two with one or two flags up at any one time, the airline station managers got together with the airport manager and the rule was made that unless all flags were flying at the same time none would be permitted to fly. As a consequence, none has flown since that date. This seems childish and silly but it typifies airline jealousy; something that is still increasing airline operating costs and causing lots of congestion on airports.

Look at any ramp on an airport served by more than one airline and see all the idle equipment—a full set of loading stands, trucks, ramps, ladders, and other equipment for each airline. Half the quantity of equipment, or even one-fourth, could often do the job for all the airlines. Who, except the individual airlines, cares whether a passenger walks down a ramp with Airline A's insignia or Airline B's insignia? And does insignia affect the cargo? If this equipment differed for each airline, separate units would be understandable, but it is all essentially the same.

Different ramp equipment is bad enough but when one goes into any airline terminal, even the smallest, he finds separate ticket counters, often separate porters, separate baggage checking, separate announcements over the loudspeaker — everything separate.

Of course, the airlines say they want to handle their own passengers. They are jealous of the quality of their service. But speaking as one who has

SOUTHERN FLIGHT Photo.



ridden on every airline in the United States, there is very little difference in service to be observed until one boards the planes. Ticketing procedure, baggage checking, manifesting and all of that is standard practice (even ticket forms are becoming standard).

Wouldn't it be more sensible to have, for example, just one person make all the announcements over the loudspeaker? One person who could talk English, with a voice that could be understood? Surely some system can be worked out so that airline messages for passengers and others could be transmitted to a central announcing booth. And certainly all plane arrivals and departures could be handled in that way.

Surely separate porters for each airline is the height of ridiculousness. Under such a system in vogue at quite a few airports, the passenger arrives outside the administration building. Let us say, for example, that he is not in a so-called "limousine" for a particular flight but in an ordinary taxicab. Anywhere from three to five porters leap at him. When he gives the name of his airline the porter for that one takes the bags; but if this particular porter doesn't happen to be there, no porter does anything and the passenger carries his own baggage (this actually happened to the writer not so long ago).

Where Consolidation Is Needed

Leaving the passengers out of it and allowing the various airlines to keep their separate establishments inside the terminal building, there are lots of things that could be done on the ramp more efficiently and much more economically if performed by a consolidated agency, either as part of the airport service for which the airlines would pay or by an organization that moves into an airport and does the work for everyone. Certainly the following are capable of consolidated handling:

1. Moving baggage, express and cargo to and from respective loading spots on airport ramps or collection areas and the airplanes of the various airlines.

2. Loading and unloading of the planes and the transfer of mail, express and cargo between planes of the same or different airlines for forwarding.

3. Operation of commissary trucks and the loading and unloading of food and containers to and from the commissary at any airport and the various planes of the airlines.

4. Operation of all air conditioning trucks and the air conditioning of all planes no matter to which airline they may belong.

5. Cleaning of the exterior and interior of the planes of any company where this is a quick job, done on the ramp, and does not involve taking planes to hangars.

Under a consolidated service, involving the activities just mentioned, much space would be saved on airport ramps, much confusion now perfectly obvious to passengers would be eliminated, and the work would be done by those properly trained to do it and for a lower cost in the end. The airport served by more than one airline is like a union railroad station in many respects. We can say what we want to about the railroads but at least they are grown up. (They are waking up and capitalizing on airline inadequacies, too.—Ed.)

There is faint evidence that the airlines may get together on joint airline ground operations. At least the Air Transport Association has announced that a committee has been formed to investigate the establishment of joint facilities affecting the loading, unloading and handling of passengers, baggage, mail and cargo; the joint use of lounges and restrooms; joint cleaning services, public address and intercommunicating systems; as well as joint information service, towing, fueling, cleaning of planes and incidental maintenance and heating of hangars. Perhaps the airlines will get together by themselves, but surely airport managers can do a lot to bring it about. ★ ★ ★

As Captain M. L. Smith's record-breaking P-80 rolled between refueling trucks at Topeka, Kansas, a carefully-rehearsed crew of 17 men swarmed over the plane. Two minutes and 59 seconds later the P-80, inspected and refueled with 600 gallons of kerosene, was off for New York.

REFUELING RECORD

WHEN it comes to efficient refueling, the record hung up by a picked crew of seventeen service men and technicians at Topeka, Kansas, will be hard to beat. In one minute and fifty-four seconds, the crew pumped 600 gallons of kerosene into a P-80A Shooting Star and gave the jet plane a thorough ground check.

This amazing refueling feat was accomplished by the carefully rehearsed crew to speed two record-smashing P-80's across the nation. The first P-80, piloted by Captain Martin L. Smith, touched its wheels at 1:58 p. m. CST and spent almost two minutes taxiing across the field to the end of the runway where the tankers were drawn up on each side of a space laid out in the middle for refueling. Captain Smith was between the fuel trucks for two minutes and fifty-nine seconds before moving down the runway for a fast, straight-out take-off.

When Captain John S. Babel landed twenty minutes later, the ground crew cut a minute off the time needed for refueling and inspection. Babel streaked down the runway, swung into place between the refueling trucks, and one minute and fifty-four seconds later started a rolling take-off.

Pilots remained in the cockpits during refueling and the jet engines idled at 4,000 rpm. while kerosene was pumped into each ship. At the same time, inspectors quickly checked tires, oxygen equipment, brakes, hydraulic lines, electrical systems, and the engine compartment. Ground crews were directed by Glenn Fulkerson, Lockheed flight test engineer, and ground equipment was directed by Capt. Charles Oates, chief of aircraft service division, ATSC flight test division, Wright Field.

Tragedy of Carelessness—

Airport Ground Fires

A careless blunder, a burst of flame, and airplanes and hangar go up in smoke. Citing examples, the CAB Safety Bureau shows an ounce of fire prevention is priceless around an airport.

THE mechanic's helper removed inspection covers and placed an unshielded extension light inside a wing. The fabric around the light burst into flame, enveloped the plane, and quickly flared through the crowded hangar. Out of control from the start, the fire destroyed the building and twenty-two aircraft.

Carelessness such as this caused 67.24 per cent of 174 airport ground fires during 1942, 1943 and 1944, declares the Safety Bureau of the CAB. During this period, 581 aircraft were damaged, and seventy-three hangars and shops, together with supplies and equipment, were burned to the ground. These figures, stresses the CAB, forcefully emphasize the fact that once fire has gained a foothold in aircraft materials the chances of extinguishing it are remote.

Assuming an average replacement value of $1,500 for each plane destroyed, an average repair bill of $650 for each one damaged, and an average value of $7,500 for each hangar and building damaged or destroyed, the total property loss through carelessness is more than $1,360,000 for the three-year period. While only tentative, these figures do give a fairly accurate word picture, from a dollars-and-cents standpoint, of the losses sustained. They show also that on the average approximately $450,000 worth of property is destroyed in these fires annually through carelessness.

Obviously it is not possible to foresee and prepare for every contingency, and for this reason some accidents are certain to occur. In view of the fact, however, that the ground-fire accident rate due to carelessness now exceeds that from all other causes by more than two to one, it most certainly would be to the best interests of all concerned to take some definite, drastic action toward their curtailment.

Welding

Of all the operations regularly performed in the repair and maintenance of aircraft, welding, because of its nature, is the one where the greatest planning and care should be exercised. The Accident Reports, however, do not indicate that such is the rule. During the three-year period covered by this study, 24.71 per cent of all ground fires, and 36.17 per cent of those resulting from carelessness, were started in welding. These fires caused the loss of 25.58 per cent of all the shops and hangars involved and 17.62 per cent of all the aircraft destroyed in ground fires. Only one minor injury was reported.

Example:

On April 30, 1942, while preparing a welding job, the mechanic did not bother to move the acetylene tank alongside the plane on which he was working. It was much quicker to stretch the hose across the floor. A workman passing by failed to observe the hose and tripped over it, pulling the torch from the mechanic's hand. The fuselage fabric ignited instantly, and despite all efforts to extinguish it the fire soon was beyond control. Two planes were destroyed and a third was badly damaged.

Electric Lamps

From the standpoint of property damage, fires started through the careless use of electric lamps (extension lights) were second only to those started in welding. It should be noted, however, that five persons were injured in these fires—two fatally, one seriously, and two to a minor degree. In every instance the careless act consisted in permitting hot lamp globes to rest against or very close to the airplane fabric. Such fires constitute 16 per cent of all those caused by carelessness, and in these 21 per cent of the hangars and shops were lost, 20 per cent of the aircraft were destroyed, and 18 per cent sustained overhaul damage.

Example:

On September 10, 1943, a mechanic suspended an extension light too close to the fabric while working in the cabin of a plane in a storage hangar. Heat from the lamp ignited the fabric, and flames spread from one plane to another so rapidly that fire-control was out of the question. Two persons were fatally burned and another sustained serious burns in futile attempts to remove some of the planes and equipment from the burning building. Six planes, the hangar, and a considerable quantity of supplies and equipment were lost.

Electric Heaters

Although only about 6 per cent of all the ground fires resulted from the use of electric heaters and heat lamps to hasten the drying of newly doped fabric, the fact remains that in each instance the act directly responsible for the fire was extremely careless. One person was trapped and perished in a hangar fire from this cause, and eighteen aircraft were totally destroyed.

Because a mechanic did not bother to move an acetylene tank alongside the plane on which he was welding, a fire was started that quickly raced beyond control. The welding was going nicely until a workman tripped over the hose, pulled it from the welder's hand, and ignited the fuselage fabric.

Example:

On May 12, 1943, after doping a patch on the upper surface of an upper wing of a biplane on which he was working, the mechanic placed a small electric heater on the wing and directed the heat downward on the patch by blocking up the rear edge of the heater base. He then went about other work on the plane and jostled it, causing the heater to fall forward onto the fabric. Fire developed instantly and the plane was a total loss.

Spray-Cleaning with Gasoline

Of particular interest is the number and severity of fires that were started while workmen were spray-cleaning engines and parts with gasoline. It should be perfectly obvious that in any such operation there is certain to be a cloud of highly inflammable vapor surrounding the work. If performed indoors, the vapor is less likely to be diffused and will be correspondingly more dangerous. The least spark, no matter what its source, will cause an instantaneous flash. Five fires that were started in this manner resulted in the loss of six hangars and twenty-eight aircraft. Two persons were seriously burned and one reported minor injury. Following one of the larger of these fires the operator stated that **"had sabotage been intended it could not have been more expertly accomplished."**

Example:

On October 31, 1942, a mechanic had just finished spray-cleaning an engine with gasoline. The spark plugs were attached to the ignition wires but were not installed in the engine—they were lying on the cylinders. Another mechanic spun the propeller and the spark plugs ignited the gasoline vapor surrounding the engine. The ensuing fire destroyed that plane and damaged two others extensively.

Engine Backfire

Thirteen fires reported as a result of engines backfiring in starting were attributed to carelessness because in each case the person servicing the plane had permitted the fuel to overflow and accumulate within the engine cowling. In these circumstances, any but the most gullible should have anticipated the fire hazard and taken the one simple necessary measure to prevent it; namely, to clear the engine compartment of the fuel before attempting to start the engine. These fires all occurred in the open and in each instance was confined to the plane involved. Eight planes were destroyed, three sustained overhaul damage, and two only minor damage. No personal injury was reported from these fires.

Example:

On May 13, 1944, a pilot serviced his plane and permitted the tank to overflow. A considerable quantity of fuel ran under the engine cowling but he did not bother to clear it out. He then attempted to start the engine but it backfired, the fuel within the cowling ignited, and the plane was destroyed.

Two buildings and four aircraft were destroyed when a mechanic, while adjusting the fuel valve in a hangar stove, held his torch behind his back with one hand. The flaming torch set fire to dope and thinner stored behind the stove.

Matches and Tobacco

Carelessness with matches and with smoking tobacco caused seven fires in which three hangars and thirty-one aircraft were destroyed. With the exception of one very unusual case, which is given as an example, all fires in this group were started in much the same manner as are others of this nature—through negligence. Usually some person had been smoking in or around the planes or buildings and inadvertently permitted live embers to fall onto combustible materials. Unnoticed, the embers smouldered for some little time and finally kindled into flame when no one was at hand to extinguish it.

Example:

On May 12, 1944, a number of men were servicing and storing planes for the night. Hangar space was limited and the planes were nosed up and stacked as closely together as possible. This is a common practice at many airports and if properly handled should give no cause for concern. In this case, however, the full tanks were canted, and considerable quantities of fuel drained from around the wire gauges in the fuel-tank caps and formed in shallow pools on the hangar floor. One of the men dared another to hold a lighted match close to one of the pools. He did so, and the hangar and eighteen planes went up in smoke.

It is realized that this particular case was very unusual, but the pools of gasoline on the hangar floor did constitute a definite and unnecessary fire hazard. If it is necessary to store planes in this manner, it would be far better practice to do so with the tanks only partly filled, or to fit them with leakproof caps while in storage. Either method would eliminate the fire hazard and result in a considerable saving of gasoline.

Heating Plants

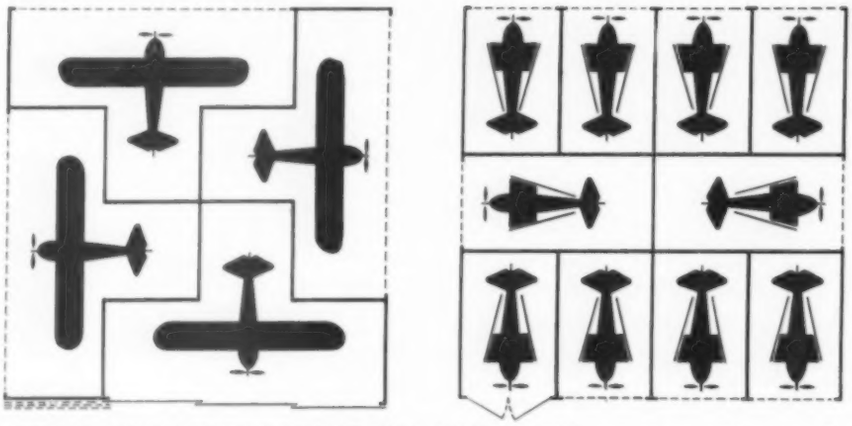
Carelessness in one form or another in the operation of "open flame" types of heating apparatus installed individually in shops and hangars was responsible for six fires in which all of the buildings burned to the ground, forty of the forty-one aircraft involved were destroyed, and one person was burned severely. This type of heating equipment should never be installed in these buildings, but the fact that it is so installed certainly is no excuse for carelessness. The acts responsible for these fires ranged from simple cases of forgetfulness, such as one in which the night watchman opened the damper on a stove and then dozed off, to others similar to the following examples.

Example:

On September 22, 1943, a mechanic improvised a torch by tying a wad of cleaning rags on the end of a welding rod. He saturated the rags with fuel oil and used it to light an oil-burning stove in one corner of the shop. A number of five-gallon cans of dope and thinner had been stored behind the stove and after lighting the burner the mechanic was peering into the fire box and adjusting the fuel valve with one hand. He held the flaming torch behind his back with the other hand and set fire to the dope and thinner. Two buildings and four aircraft were destroyed.

The few remaining types of fires are so fundamentally similar to those already discussed that their detailed description would be of little added value. Once fire has gained foothold in these materials, the chances of extinguishing it are remote. This is borne out by the preponderence of washout and overhaul damage, as compared with that of a lesser degree. It also is evident that more than two-thirds of all of these fires could have been prevented simply by the exercise of reasonable planning and care.

★ ★ ★



FOLDING-WING DESIGN FOR PERSONAL PLANES would save space and money for fliers and operators, as illustrated by these CAA drawings. The simple improvement would save airplane owners $150 or more a year in storage charges and at the same time increase the airfield owner's income, declared John H. Geisse, assistant to the administrator for Personal Flying Development, CAA. "With folding-wing planes the cost of hangar construction per plane would be cut two-thirds or more, and the number of planes which could be accommodated at a small airfield would be greatly increased," Geisse explained.

Forty Surplus Steel Hangars Offered

Forty surplus steel hangars were located in Granite City, Ill., last month and offered by the War Assets Corporation at $17,430 each, and local government agencies such as cities and counties were expected to buy them quickly at a discount of about 40 per cent allowed political subdivisions. They were quonset-type, 130 ft. by 160 ft., never unpacked from shipping crates intended for transit to Europe, but they didn't have doors.

Model Airport Lease, Management Contract Available for Study

Civic leaders and communities desiring a guide for airport lease and management contracts may obtain samples of a contract recently consummated between the City of Eldon, Mo., and Associated Airports, Inc. Eldon's model Airpark, which will be dedicated June 8 and 9, was contracted after consultations with the Aviation Division of Missouri State Department of Resources and Development, the CAA's Washington, D. C., legal staff, the National Aerounautic Association, the Personal Aircraft Council of the Aircraft Industries Association, and the CAA's 5th Region Office at Kansas City. Copies of the model contract may be obtained from the Missouri State Department of Resources and Development, State Office Building, Jefferson City, Mo.

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CAA and States Agree on Enforcement Points

State aeronautical bodies and the CAA have reached complete agreement on major jurisdictional differences, according to T. P. Wright, CAA administrator. Wright reported clear definition of the division of authority between the Federal and state governments on problems of "policing the air" and punishment for reckless operation of aircraft.

Following a two-day meeting of National Association of State Aviation officials and the CAA, the conferees agreed the CAA will continue to enforce regulations concerning airworthiness of aircraft, competency of airmen, operating standards and air traffic rules, with the states co-operating in administering punishment or reckless operation of aircraft in their jurisdiction. Supplementing the CAA enforcement of safe flying practices, the states will have the power to "ground" fliers through court action.

It was also agreed that states may, if they desire, require the registration of aircraft and pilots if the registration fees are nominal and, where personal property taxes exist, are in full substitution for all state, county, and municipal property taxes on the aircraft. Failure to register under state laws may be punished by a reasonable fine or term of imprisonment but not by "grounding," the group agreed.

New CAA Minimums For Sub I Airports

The CAA is now working on a revision of the Model Airports Act which will set up minimum facilities and standards required for commercial airports of less than Class 1 size. Notable changes in the new draft are a reduction of the minimum landing strip requirements from 1,800 to 1,500 feet and a reduction of glide angles from 20 to 1 to 15 to 1. The Act will serve as a model for state legislation.

44 Surplus Airports Being Processed in Southwest

The following airfields in Arkansas, Louisiana, Oklahoma, New Mexico and Texas have been or will be inactivated by the military services and are in the process of being returned to civil use in accordance with Regulation SPA 16 of the War Assets Corporation:

Arkansas — Southwestern Proving Grounds, Hope; Municipal, Texarkana; Roe Auxiliary, Stuttgart; AAF field, Walnut Ridge; Walnut Ridge Auxiliary, Walcott.

Louisiana — Municipal, Alexandria; Harding, Baton Rouge; Lafayette, Lafayette; AAF Aux., Gillis; and AAF, Pollock.

Oklahoma—Frederick Aux. No. 3, Grandfield; Will Rogers, Oklahoma City; AAF fields, Perry and Ardmore; Goldsby Aux., Norman; W-B airfield, Chickasha; and Aux. No. 2 and 3, Altus.

New Mexico—AAF fields, Ft. Sumner and Lordsburg; and Aux. No. 2 and 4 at Roswell.

Texas—AAF fields, Palacios, Pecos, Dalhart; Municipal at Brownsville, Big Spring, El Paso and Galveston; Moore, Mission; Jefferson County, Beaumont; Stinson and Alamo, San Antonio; Majors, AAF Aux. No. 1, So. Sulphur Aux. No. 3, and Cash Auxiliary at Greenville; Avenger, Sweetwater; Concho, San Angelo; Foster and Foster Aux. No. 2, Victoria; Maverick County, Eagle Pass; AAF Aux. No. 1, McGregor; Curtis, Brady; and Aux. No. 4, Toyah.

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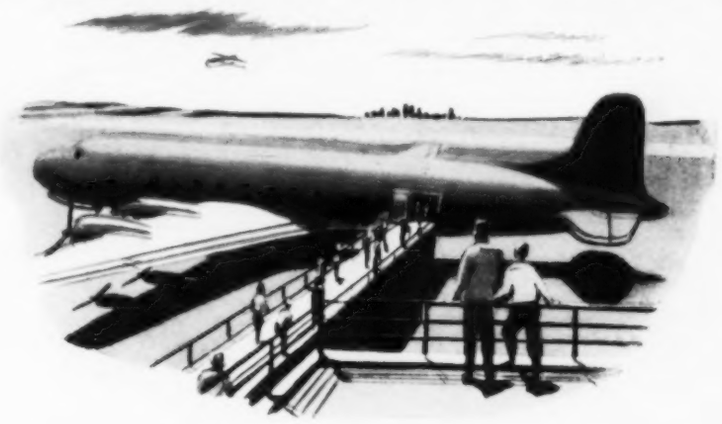

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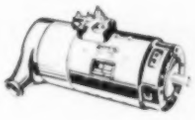

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THE *Sky's the Limit*

BY BILL GREEN

The CAA is performing a big task and doing it well. . . . Some pointers we learned about cruise control in the Cessna. . . . . The flying automobile may have a future, but what private flying needs now is a nationwide airport car rental service.

Thanks to the CAA

THE other day we were flying over some pretty rough country and observing the lack of suitable places for emergency landings. As it happened, we were flying the airline route and in a few moments we saw a nice field built and maintained by the Civil Aeronautics Administration. That set us to thinking a lot of things about intermediate fields and other facilities which have been provided over the years by the CAA.

A long time ago there were no fields except occasional airports built by private individuals or companies. In the early 30's, the Department of Commerce took over the responsibility for airline facilities and started building an occasional emergency landing field. Back in those days, there was money for practically everything except aviation, and there are many of us who can remember that FDR did his best to destroy commercial aviation. However, the Department of Commerce and subsequently the CAA continued to carry the ball and we now have airports, emergency fields, lighted airways, radio controls towers, etc., all over the country and in fairly great profusion.

On our most recent trip, we flew to Los Angeles from Dallas and found lighted airways all the way with several choices as to which direction to go at a number of different points. We found emergency fields usually within gliding distance if we had any altitude worth mentioning, even though our twin-engine Cessna isn't supposed to maintain altitude under full load condition above 3,500 feet and most of our trip had to be made above that ground elevation. We nevertheless knew one engine would stretch our glide to give us considerably greater choice in landing. Even though we would have preferred a continuously paved landing strip from Dallas to Los Angeles, we still derived great comfort from the fact that we were almost never out of sight of a landing field.

Any time you fly a few miles off the regular airline route, especially in mountainous country, you will find a lot of places where things are in the laps of the gods if your engine quits. There are many examples of fatal and serious-injury crack-ups due to engine failures in such terrain. We cannot help but give considerable credit to CAA for its effort in the building of emergency fields, and we hope they increase their efforts, if that is at all possible.

Airplanes can never be like automobiles in the regard that if the engine stops or there is some other mechanical failure you are on the ground and in most cases absolutely safe. Any time an engine quits in an airplane, there is an emergency and there is usually very little time in which to cope with the situation. Present-day engines do not often quit and in the thirteenth year since we obtained our license we have had only two complete engine failures and were lucky enough to find good fields and get in safely. But engine failures still are an ever-present possibility. After all there are an awful lot of pieces in each engine and all of them are subject to deterioration, moisture absorption, corrosion, etc. Even though the best preventive for engine failure is proper design in the first place and proper maintenance in the second place, we must also make adequate provision for proper places to set down in event our precautions fail us.

People who have only recently begun to fly regard the CAA as a permanent thing and as a necessity, even though some of them quake when they go up for their licenses. Not many people know just how diversified are the activities of CAA. They have something to do with every possible angle of aviation. In the first place, they sit in on the design of every aircraft and they have to be satisfied that it is safe, that its operating characteristics are normal and dependable, and that all the airplane's components, from propeller to tail wheel, are safe, dependable and properly co-ordinated. Almost the biggest hurdle any manufacturer has to jump is that of satisfying the CAA that his product is airworthy.

Next, the CAA licenses each and every aircraft separately and individually as they are completed and test-flown at the factory. Third, the CAA licenses each and every pilot in this country and supervises him annually, and in some cases almost daily, in his flying activities. It requires each pilot to maintain himself in physical condition necessary to fly properly and safely. Fourth, the CAA establishes, maintains and operates all airways radio facilities and many of the control towers at airports. It supervises flying safety both in regard to the pilot and the aircraft. Until recently it supervised all aircraft and gave them an annual inspection and an inspection after each major overhaul was completed. We have heard that this service has been relaxed and may be completely discontinued in view of the tremendous number of aircraft expected on the market. This will be a bad thing, as most people do not keep up their automobiles and most people will not keep up their aircraft unless required to do so. The fact is most people do not realize the things that should be done to aircraft in order to insure their operation. We hope the money and men will eventually be found to continue this service lest many lives be lost.

At any rate, we believe the CAA has been the best friend aviation has had and its importance increases every day. It behooves every aircraft owner and pilot to urge his congressman to provide literally for the CAA as each year's requirement comes up.

Cessna on Cross-Country

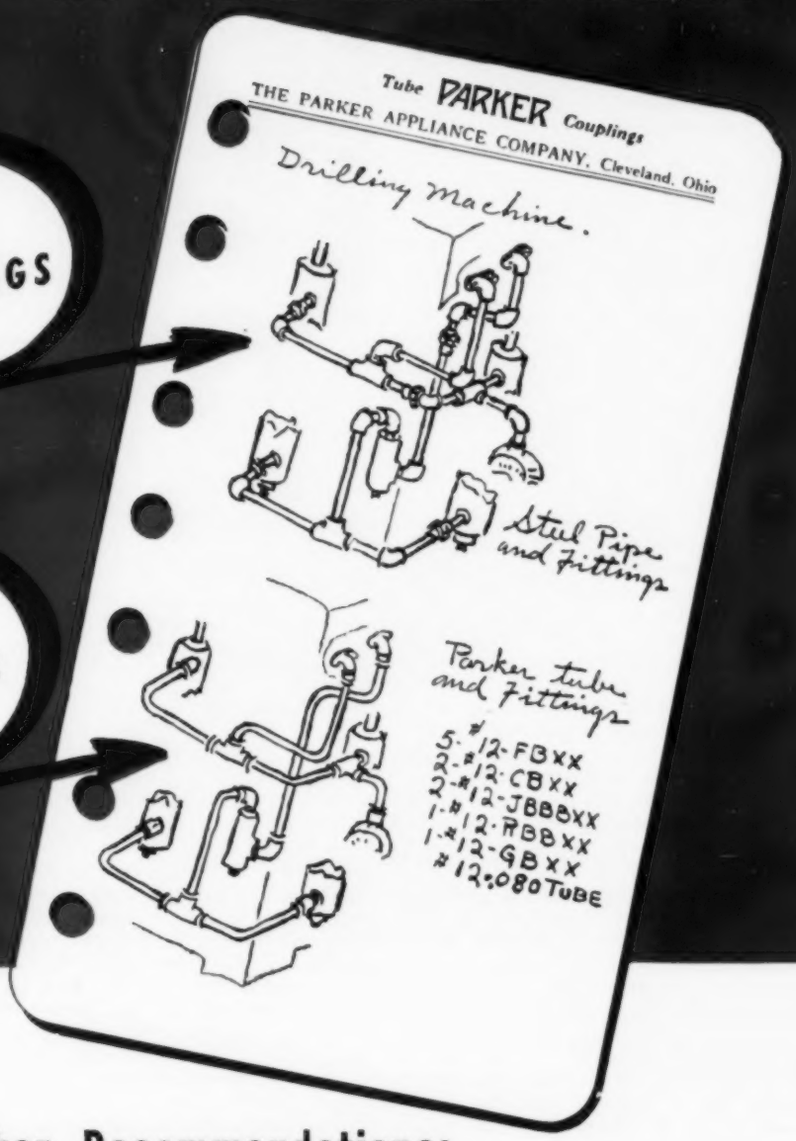
We learned some interesting things about the twin-engine Cessna on the flight to California. Some of them we are investigating further, but there are two or three notions we can pass on to you. We had strong headwinds all the way to California yet managed to average about 135 mph. During one portion of it we made only 118 mph. ground speed but during the remainder we averaged about 141. Gas consumption averaged thirty-five gallons per hour, making seventeen and one-half gallons per engine. We thought that was a little high but we operated in all the ranges the Army had indicated on the instruments by green lines. We also conformed to the operating instructions in the manual.

Cruising at 1,950 rpm. and 20 inches

PROOF FROM A PARKER ENGINEER'S NOTEBOOK

22 PIPE FITTINGS
OLD METHOD

11 PARKER TUBE COUPLINGS
RECOMMENDED PARKER METHOD



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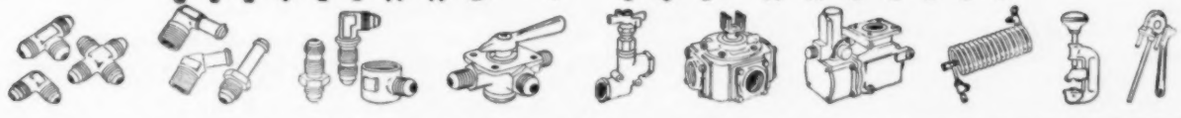

FLUID POWER PRODUCTS FOR ALL INDUSTRY

manifold pressure, the indicated air speed was right at 150 mph. We tried different carburetor air temperatures and found the greatest power and the highest cruising speed for any particular setting occurred when the input air temperature was 5 degrees centigrade (about 40 degrees Fahrenheit). While in California we read Lindbergh's article in which he gave some of the schemes used to conserve gas in Army fighters. One method he liked was to reduce engine revolutions and increase manifold pressure.

On the return trip from Los Angeles to El Paso, we used the standard Army ranges on all instruments but leaving El Paso we reduced the cruising engine revolutions to 1,850 and held the manifold pressure at 20½ inches. We were rather agreeably surprised to find that the emergency tank burned 14 per cent longer than it had previously on a number of tests. Subsequent checks of total gas consumption indicated between 12 and 14 per cent saving when using reduced engine revolution. The indicated airspeed was still 150 mph. and the ground speed with a cross tailwind ran as high as 172 mph. but averaged about 160 ground speed. To us, this indicates that the overall power output was just as great but the fuel efficiency was considerably greater at the slower crankshaft speed than at higher speed. The engines appeared to run farther in the lower speed and better synchronization was maintained. We intend to consult the Jacobs factory to see whether there are any good reasons against operating these engines at the lower speed. Any reader contemplating following this procedure should find out exactly what the manufacturer's recommendations are in respect to your particular engines and propellers.

Even though the UC-78 Cessna is a prewar design and while most 78's are now several years old, we were pleasantly surprised at its nice handling characteristics, both on the ground and in the air, and with the co-ordination of controls which is well worked out. For the prices that these airplanes can presently be purchased, and considering their utility, versatility and economy, they make awfully nice airplanes for private executive use. Incidentally, Cessna's new Model 140 is causing talk around the country. It all indicates to us what we have always thought is true, namely, that Cessna has never yet produced a dud; Cessna aircraft are first class airplanes in their field.

Flying Auto Misgivings

We've seen a lot of publicity recently on roadable airplanes. Apparently, Willis Brown of Southern Aircraft now has a pretty reasonable approach to the roadable proposition. A number of years ago, G. Wilmer Cornelius was running around the country attempting to promote such a design and Brown's new airplane looks not unlike Cornelius' model of ten years ago. Personally, we are somewhat dubious about the possibilities of a combination airplane and automobile for a number of reasons, all of which may in some manner be overcome, but we see no immediate satisfactory answer to a number of the problems. (1) Presumably Mr. Ford and General Motors have done about the best they can on the combination of power, weight, riding characteristics, steering characteristics, safety, etc., and their cars average somewhere around 2,500 to 3,000 pounds in weight. Any airplane able to haul that much weight would of necessity need a pretty large engine, which would greatly over-power the fuselage when used as an auto on the ground. The necessity of carrying transmission, differential, springs, etc., greatly adds to the weight of the airplane and would have to be hauled around all the time with increased power so that it would be available when, as and if the airplane were used as the roadable car. Apparently the roadable airplane would even have to carry a spare tire.

According to the publicity, it requires four men ten minutes to take the wings off and make the fuselage a roadable and that probably means that one man couldn't do it at all with present design. We believe, however, that designs can be readily worked out so the pilot, with no effort worthy of note, could drive the car out from under the wings and leave them suspended on built-in props.

ANOTHER "POSTWAR" LIGHTPLANE DEVELOPMENT is a revival of the American Eaglet, originally developed during the late 1920's in Kansas City, by American Eaglecraft Co., of Fort Worth, Texas. A 50-hp. Continental has replaced the old Salmson and several refinements have been added to the Eaglet, a two-place tandem trainer which stalls at 28 mph., cruises at 75 mph. and has a top of 92 mph. The figures are from the new manufacturer, Verner A. Robinson, shown above (in vest) with Frank W. Andrews, CAA factory inspector, and E. P. Hill, chief test pilot and assistant to the president. Robinson, who also operates a garment factory, expects to market the 638-lb. Eaglet (gross 1,050 lbs.) at about $1,500. He is flying the prototype, now undergoing CAA tests, and has another one near completion. Production plans have not been completed. Dimensions are 34 ft. 4 in. for wing span, 21 ft. 9 in. for length and 8 ft. 6 in. for height. —(SOUTHERN FLIGHT Photo.)

However, all things considered, we have never felt any need for combination auto-boats and auto-planes, except in special emergencies such as war. It seems that almost no vehicle can successfully perform two entirely different, unrelated operations with equally high efficiency. It looks as if we should continue the development of airplanes along one line and automobiles along another line until some entirely new principles and materials are developed.

The thing we believe would be of the greatest benefit to aviation would not be a roadable airplane but a country-wide system of rent-a-car or drive-ur-self cars at all principal airports. As a matter of fact they could be made available at all airports where there is considerable traffic.

One thing to consider in this business is that the American public has never gone in for light, spindley underpowered automotive equipment of any sort, even though some European countries have popularized such equipment.

This is not to say, however, that Willis Brown of Southern Aircraft or somebody else may not work out a thoroughly satisfactory device, and when, as and if they do, we might buy one. Being an engineer, however, we are aware of some of the problems and have, in fact, been trying to think of some way of overcoming some of them ourselves. Looks like roadable airplanes are quite a little way off.

★ ★ ★

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CONTINENTAL MOTORS EXCHANGING REBUILT ENGINES FOR OLD

Used engines may be exchanged for factory remanufactured engines under a revolutionary sales and service plan established by Continental Motors Corporation. Scheduled to go into effect March 1, the exchange program stipulates only that engines turned in be in a "runable" condition.

For the fixed price of $247.50, the owner of a Continental A65-8 engine —no matter whether it has 200 or 4,000 hours of operation—can obtain from his distributor or service station a factory remanufactured engine with a new engine guarantee. In announcing the new plan, Continental's Muskegon plant service manager, R. D. Hicks, said: "This means that no longer are there hidden costs in engine operation and maintenance. And of equal importance is the fact that Continental engine owners are no longer subject to the sometimes exorbitant charges of the unapproved service and repair stations. At the same time, they are assured of a replacement engine equal in performance to a new engine—and ready for immediate delivery from their local distributor."

The engine remanufacturing plan will be handled only through distributors and service stations, Hicks explained. Prices set up are $247.50 for the A65-8, $271.80 for the A75-8 or A75-9, and $288 for the C75 and C85. These prices are for the stripped-down engine, Hicks pointed out, and added this is necessary because of the large variety of accessory equipment in use. Figures quoted above are for engine less carburetor, magnetos, wiring harness, spark plugs, starter, generator, air scoop, oil pump, oil cooler, and baffles. The remanufactured engine is less these same accessories but includes all necessary new or remanufactured parts, all labor, engine break-in run, and shipping box.

Stressing that Continental has long encouraged the use of its own engine rebuilding facilities by engine owners, Hicks termed the new exchange program "a kind of insurance plan." "Large volume permits production-line methods and reduces the labor cost," Hicks explained. "Records on hundreds of overhauls and rebuildings reveal average figures. And then, too," Hicks concluded, "we are confident of the future of aviation."

The sales and service staffs for Eclipse Accessories and Pioneer Instruments, both divisions of Bendix Aviation Corporation, have been consolidated to provide greater efficiency and closer co-operation. Roy H. Isaacs will direct sales and service for the division; George A. Lewthwaite will be sales manager, R. P. Luce is assistant sales manager, and Charles A. Wolf is now in charge of sales engineering. Dan S. Tilden is service manager for both Eclipse and Pioneer, John S. McKenna is supervisor of field service, and Harold Feck will supervise factory service. Donald M. McGarth was appointed assistant director of sales and service and Frederic G. Muller will direct public relations and advertising.

Appointment of two distributors and one representative to cover new territories has been announced by Sydney Nesbitt, president of the Atlantic Aviation Corporation.

New York Aviation Corporation of 5 West 46 St., New York City, will be distributor for Long Island; Red Bank Airport, Inc., Red Bank, N. J., will cover the Monmouth County area; and John M. Erskine will represent Atlantic in New England. H. Warren Holladay is president of New York Aviation Corporation and W. R. Laudenslager is president of Red Bank Airport, Inc. Nesbitt also announced the appointment of Smith-Meeker Engineering Company of New York as service dealer for aircraft radios.

Edward S. Safford, export sales manager for Beech Aircraft, is now in Europe for discussions with the Netherlands government. John P. Gaty, right, vice president and general manager of Beech, recently revealed his company is currently producing $3,000,000 worth of commercial planes a month.

Atlantic Aviation has sold numerous executive-type transports to large corporations and individuals, Nesbitt reported. "Larger corporations are finding it more practical and more economical to buy their own planes to transport executives," Nesbitt said.

Three new Stinson airplane distributors have been appointed in the Mountain States Region by Larry Cooper, general sales manager. They are Douglas Robinson, Gilpin Airport, Tucson, Ariz.; Harry B. Combs and Lou Hayden, Mountain States Aviation Company, Denver, Colorado; and Charles J. MacCharles and Landon W. Fahrner, Servair, Municipal Airport, Helena, Montana. In addition to selling airplanes, Cooper said, the distributors will maintain complete service operations and will handle complete lines of Stinson parts.

A twin-engine 18-S Beechcraft has been purchased by Hawthorne Flying Service, Orangeburg, S. C., for sales demonstrations and charter trips. Hawthorne is regional representative for Beech Aircraft in North and South Carolina, Virginia, District of Columbia, and parts of Maryland and Georgia.

Major John T. Godfrey, left, and Major Don S. Gentile, center, welcomed by John Kennedy, president of Globe Aircraft Corp., at Fort Worth, have been appointed division directors of sales and service for Globe. Both were outstanding aces of world war II.

Timm Aircraft Corporation has announced the appointment of Chester C. Cole, left, as vice president in charge of modification. Colonel A. F. Davis, Jr., right, has resumed his duties as manager of advertising and publicity for the Aeronca Aircraft Corporation.

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Jack Robinson

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Municipal Airport
Jess Faulkner
Henry Ayres

RANGER
Ranger Flying Service
Municipal Airport
C. C. McKeever

SAN ANTONIO
Brown Flying Service
Alamo Field
Lloyd Brown

SAN BENITO
San Benito Flying Service
San Benito Airport
King Cruse

TEMPLE
Reads Air Service
Elmer Read

WACO
Jack V. Newland
Newland Field

WAXAHACHIE
Ellis County Airport
Bert Wise

WICHITA FALLS
Thomason Aircraft Sales
Municipal Airport
M. H. Thomason

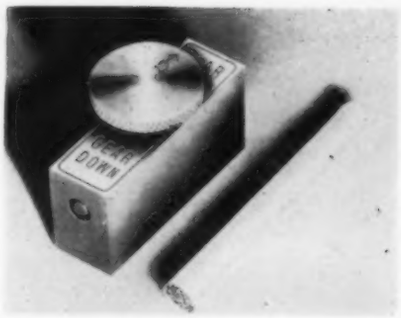
Revitalized NATA Planned at Region 1 Meeting

In the first of a series of regional conferences planned for the National Aviation Trades Association, Region 1 met recently in New York City and prepared a program designed to revitalize the NATA and to provide an organized approach to problems of fixed-base operators.

As part of a program to develop a new membership and services program, NATA agreed upon a national goal of $100,000, with annual dues based on the size of member companies. Member firms with ten or more employes will pay an annual membership fee of $150, firms with five to ten employes will pay $100 annually, and firms with less than five employes will pay $50 dues. Co-operating manufacturer and aeronautical associations will be charged associate member fees of $100. The New York conference was presided over by Joseph Garside, president of Wiggins

4th REGION OPERATORS MEET

It was mostly serious business and outspoken discussion that occupied the second annual Fourth Region Non-scheduled Operators Conference at Fort Worth, February 25-27, but our candid photographer came back with this collection of operators enjoying refreshments and informal discussions between sessions. By the numbers and left to right they include 1. C. A. (Buck) Rowe, Dallas, Gulf Oil; Texas Aeronautics Commission Director Asbury Meadows; Major W. F. (Bill) Long, Dallas Aviation School; John H. Q. Burke, Wiley Post Airport, Oklahoma City. 2. Unidentified person; R. J. Cardwell, Bryan, Texas; Freddie Bartholomew, Oklahoma City; R. O. Dulaney, Dallas, Texas Company. 3. Willard Dixon and Jack Quick of Aero Insurance Underwriters, Dallas, talking with Ed Travis, Fourth Region CAA Airport Supervisor (center). 4. R. O. Lindsey, CAA; Samuel Dillinger, CAA. 5. Dick Collins, Roswell, N. M., and Al Meyer, Albuquerque, N. M., CAA, talking about the West with two of their friends. 6 T. N. Hollis, Henderson, Texas; Jack Newland, Waco. 7. J. O. (Toots) Womack, Dallas, Mustang Airport; W. M. McDonald, Fort Worth, Aircraft Investment Corp. 8. Clarence Rawls, McAlester, Okla.; Mack Clark, Fort Worth, CAA; George Jalonick, Dallas, Southwest Airmotive; Hart Bowman, Dallas, Public Relations Supervisor of Aviation. 9. M. H. French, La Feria, Texas, Central Valley Airport; Larry Cook, Dallas, Magnolia Petroleum. 10. Hayne Jarrard, Mexia, Texas, Flying Service; R. H. Graham, Dallas, CAA. 11. John Burke and Buck Rowe (assisting with the service). 12. Lieutenant Commander and Mrs. A. H. Knouff, Tucson, Ariz., SOUTHERN FLIGHT contributing editor, with Colonel Jack Landers of Joshua, Texas, who destroyed 34½ enemy planes in Europe, in background.



Hydro-Switch, a tiny control which eliminates solenoids and electrical motors ordinarily required for remote operation of hydraulically actuated devices, is shown alongside a cigarette. Air Associates, distributors, report weight and costs of installation are 50 per cent less than conventional equipment.

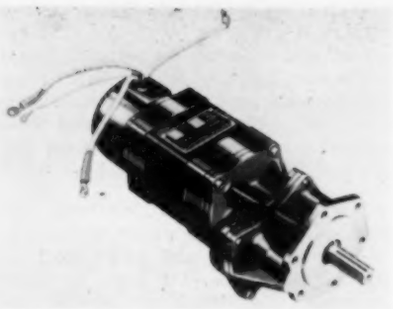
Airways, Inc. Temporary national headquarters of NATA has been established at 1025 Connecticut Ave., Washington, D. C.

Current wholesale, retail, and loan values of more than a thousand used aircraft produced since 1930 are listed in Air Market Values, a service published by George Stromme and Associates, 2328 West 7th St., Los Angeles 5, California. Designed to serve as a standard for uniformity in the pricing of used aircraft, the service is prepared in loose-leaf form for frequent supplements and revisions. Military and surplus gliders are also listed. The publisher is aided by an advisory board of numerous leading used plane dealers, finance, and insurance authorities.

A bill to amend the Civil Aeronautics Act so as to provide for the recording of ownership of civil aircraft, aircraft engines, propellers, and appliances has been introduced by Rep. Alfred L. Bulwinkle (D.,N.C.). Known as H. R. 5502, the bill is understood to have the endorsement of the American Bankers Association, Region No. 1 of the National Aviation Trades Association, and companies engaged in time-sales financing of aircraft and aircraft equipment.

The Executive Transport Company, established at the former North American Aviation plant near Dallas, Texas, by D. A. Fowlie, is specializing in converting and refitting surplus multi-engine Douglas and Beechcraft planes into executive-type transports. ETCO has arranged a plan under which the luxuriously-fitted transports may be either leased or purchased and offers immediate delivery.

Steam detergent cleaning methods are outlined in a booklet prepared by Oakite Products, Inc. Describing the various applications of steam cleaning, the booklet covers: cleaning machinery equipment and parts for subsequent repair and overhaul, preparing equipment surfaces for repainting or refinishing, cleaning equipment too large for tank immersion, and paint-stripping. Copies may be obtained at no charge from Oakite Products, Inc., 22 Thames St., New York 6, N. Y.



Starter and generator combination, weighing nineteen pounds, couples directly to engine crankshaft and eliminates need for gear, chain, or belt drives. A built-in torque-limiting device protects against damages from engine backfire. Manufacturer: Electrical Engineering and Manufacturing Corporation, 46-6 W. Jefferson Blvd., Los Angeles, Calif.

A pocket-sized booklet covering cleaning, polishing, and waxing of all types of aircraft has been prepared by Autogroom Company, Inc., manufacturer of an aircraft cleaner and finisher. The booklet discusses care

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and cleaning of Alclad, fabric covered airplanes, doped or lacquered surfaces, metal and wooden propellers, plastic glass and plastic transparent glass. Copies may be obtained at no charge from Air Associates, Inc., or from Autogroom Company, Inc., 68-02 38th Avenue, Woodside, Long Island, N. Y.

"Insalize," a liquid insulator now available, eliminates corrosion on electrical connections and at battery and starter terminals. Of high dielectric strength, the insulator is declared highly resistant to moisture, heat, acids, alkalis, and oils. The manufacturer recommends its use in correcting open shorts in armatures and fields of electric motors, insulating coils, distributors, spark plugs, armatures and wiring, for reducing radio interference, and to insulate against water, condensation, and fog. Further information may be obtained from the Lumanize Products Co., 141 W. Jackson Blvd., Chicago 4, Ill.

Ossorghin Aviation Company, located at Reno, Nevada's new Sparks Air Park, is Globe Swift distributor for Nevada, Northern California, and Utah and will provide complete sales and service facilities at the new airport. Located three miles northeast of Reno, Sparks Air Park is owned and managed by Henry Shriver and has an administration building, cafe, 50 by 60 ft. hangar, control tower, and eighteen individual T-hangars. Work has been completed on the 3,000-ft. east-west runway and the 3,500-ft. north-south runway is nearing completion.

Marvin Whiteman, founder of Whiteman Air Park, and Bernie LaBarr, field manager, recently visited the Cessna factory in Wichita, Kansas, to inspect the new Cessna and complete arrangements for the Southern California distributorship. Whiteman and LaBarr revealed they have sold their flight school operation and twelve Interstates to Andy Devine, film actor, and his aviation partner, Dick Probert. Although Whiteman will distribute Cessnas, he explained that Whiteman Air Park, located near Los Angeles, will house dealers for many well-known makes of private planes.

Sky Harbor Air Park, a new airport located four miles northwest of San Angelo, Texas, has four 3,500 ft. runways, concrete tile hangars, sales and service facilities, and charter service. Instruction and ground school are also offered. R. O. Livingston and L. H. Riedl, the owners, are veterans and both are qualified flight instructors.

An 80 ft. square hangar nearing completion at Engel Airport, Escondido, California, was scheduled to begin operation March 1. Two additional buildings, one 100 by 30 ft. and the other 40 by 80 ft., will augment present repair facilities. Construction of T-hangars will also be started shortly, according to an announcement by John H. Engel.

Ignition difficulty can be located quickly with this 25-lb. portable ignition harness tester. Manufacturer: Globe Aircraft Specialties, Inc., 135-06 Northern Blvd., Flushing, N. Y.

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Ford Tri-Motor 5 AT-C 14,000 Lbs. Gross. Ship, propellers, instruments just majored. Engines have 100 hrs. since major. New cowling, brakes, interior trim. Extra fuel tank in wing tip with 400 Lb. baggage compartment in opposite wing tip. Plane licensed as of Jan. 18, 1946. Inquire of Monroe Airways, Inc., 38 East Willow St., Monroe, Michigan.

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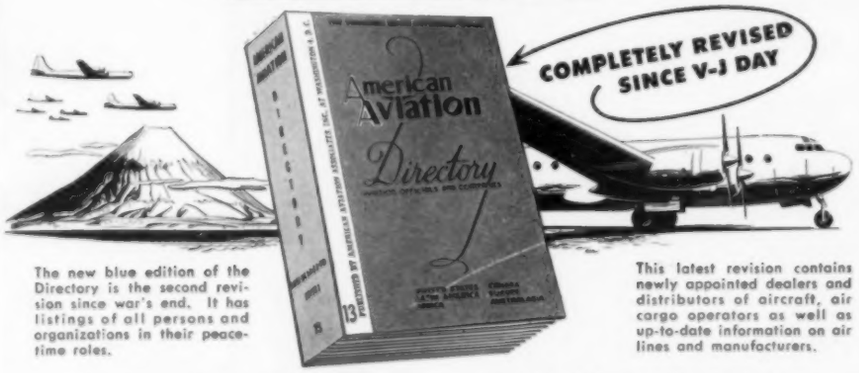

The new blue edition of the Directory is the second revision since war's end. It has listings of all persons and organizations in their peacetime roles.

This latest revision contains newly appointed dealers and distributors of aircraft, air cargo operators as well as up-to-date information on air lines and manufacturers.

An Essential in Your Office . . . Invaluable on the Road

This Spring-Summer edition of the Blue Directory is the thirteenth completely revised issue since the inception of the publication six years ago. Today's standard reference for the aircraft industry. For the first time we have included a listing of dealers and distributors of aircraft and a section listing the growing number of Air Cargo and Charter operators. A copy of American Aviation Directory in your brief case or on your desk places indispensable facts about this market at your finger tips.

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U. S. Leadership in Military Aircraft Production Disappears with Output Now Below Great Britain's

Recapitulation of world military aircraft production, with Russian figures disclosed for the first time by Marshal Stalin in a speech last month calling for increased Soviet industrial effort, showed American industry produced more aircraft during 1942-44 than the next two largest producing nations combined. E. E. Wilson, chairman of the Aircraft Industries Association, pointed out that U. S. aircraft production was virtually double that of our nearest competitor. Germany, incidentally, outproduced Great Britain in number of units.

AIA figures showing world production included the following:

	1942	1943	1944	TOTAL
United States	47,873	85,946	96,369	230,188
Russia*	40,000	40,000	40,000	120,000
Germany	15,000	25,000	40,000	80,000
Great Britain	23,671	26,263	29,220	79,154
Japan	9,308	16,296	28,220	53,824

*Russian production "averaged about 40,000 planes per year," according to Marshal Stalin's recent disclosure.

"The planes produced during the war all are now obsolete and national security now rests on the new types developed in recent months," Wilson pointed out, adding that American production of such new types has fallen sharply below that of Britain's, as shown by the latest available figures, as follows:

	Britain	U. S. A.
October, 1945	666	470
November, 1945	347	256
December, 1945	(unavailable)	252
January, 1946	(unavailable)	164

(U. S. figures above include gliders; January U. S. figure does not include experimental planes.)

British schedules for 1946 call for production about twice as many military aircraft as will be produced in the U. S., according to Wilson, who said Australia will produce half as many as the U. S. Russian schedules are unknown.

Meanwhile, 1945 U. S. military production figures have been recapitulated, as follows:

Month	*Airplanes*	*Gliders*	*Total Aircraft*
January	6,535	290	6,825
February	6,296	346	6,642
March	7,053	477	7,530
April	6,412	465	6,877
May	6,354	540	6,894
June	5,794	571	6,365
July	4,784	531	5,315
August	2,869	230	3,099
September	766	8	774
October	458	12	470
November	249	7	256
December	245	7	252
Total	47,815	3,476	52,191

BOMBERS—four-engine: B-29 2,642, B-32 102, B-17 1,552, B-25 2,117, PB4Y-2 453, total 6,866; two-engine: PB2B 12, PBY-5A, 6A 184, PV-2 470, B-26 176, PBM-5 379, PBN-1 19, B-25 1,460, OA-10A 25, A-26, XA-26 1,782, XA-38 2, XB-42 1, total 4,510; one-engine: SBW-4,5 308, TBY-2, 3 178, SB2C-4, 5 1,610, TBM-3 2,953, SBF-4 100, XA-41 1, BTD-1, 2 and XBTD-2 24, XA-32 2, BT2D 1, total 5,177; total bombers 16,553.

FIGHTERS—two-engine: P-59, B 29, P-38 1,666, F7F, 2, 3 210, P-61, B 219, XP-67 1, XP-82 3, XP-83 1, total 2,129; one-engine: P-63 1,456, F4U-1C, D-4 2,046, FM-2 1,337, FG-1D 1,521, F6F, 5, 5N 3,578, F8F-1 and XF8F-1 210, P-51 5,519, P-47 3,657, FR, XFR 69, P-75 12, P-80 238, XP-55 3, XP-77 1, F2G-1 8, XP-54 1, RP-63 19, total 19,675, total fighters 21,804.

PHOTOGRAPHIC AND NAVAL RECONNAISSANCE—SC-1 445, F-2B 1, F-6D 2, total photographic and naval reconnaissance 448.

TRANSPORTS—four-engine: C-87 and RY-3 29, C-54 708, C-69 11, XC-97 2, C-74 1, total 751; two- and one-engine: C-45 612, J2F-6 119, C-46 1,459, C-47 1,542, JRF-5 35, J4F-2 7, C-64A 86, C-82 12, C-117, A 11, total 3,883, total transports 4,634.

TRAINERS—AT-6D, F 1,237, PT-13D 72, total trainers 1,309.

LIAISON—L-5 1,103, L-4 814, XL-14 5, total liaison 1,922.

ROTARY WING—R-6A, YR-6A 214, XR-6A 2, YR-5A, R-5 25, XR-1A 2, YO-60 1, YR-5E 5, total rotary wing 249.

SPECIAL PURPOSE—PQ-14A, YPQ-14 894, TD2D-1 2, total special purpose 896.

TOTALS—Airplanes 47,815, gliders 3,476, ground aircraft 52,191.

Only 161 Aircraft Accepted by Army and Navy in January

Acceptances of aircraft by the Army and Navy in January was 161, or 81 less than the December total. Of these, the Army received ninety and the Navy seventy-one. By types, the January number consisted of eleven bombers, eighty-two fighters, three transports, ten rotary wing and fifty-five special purpose craft. Experimental aircraft were not included in the total.

Beech Production Exceeds $3,000,000 Per Month

Beech Aircraft Corporation is producing more than $3,000,000 worth of planes a month, John P. Gaty, vice president and general manager, revealed in an open letter to Beech's 4,200 employes. Deliveries during the month of December, 1945, exceeded total deliveries during the entire year of 1940, Gaty added. Gaty lauded Beech's quick changeover from military to commercial production and said this enabled Beech to become the first manufacturer to receive an air carrier license under the new CAA regulations. The license was given on the improved all-metal twin-engine Model 18 which the corporation is now producing in volume.

Douglas XC-112 Tested; Military Version of DC-6

The XC-112 military version of the Douglas DC-6 was flown in February. Four domestic, one international, and one foreign carrier have standing orders for commercial versions of this 52-68 passenger companion to the DC-4. In appearance, the DC-4 and DC-6 are nearly identical. The span of each is the same, while the DC-6 has a fuselage about seven feet longer. The DC-6, powered by four 2,100-hp. Pratt & Whitney Double Wasps, has approximately 2,800 additional horsepower, and grosses about 16,000 pounds more, with speeds improved more than 80 miles an hour. Other improvements include reversible pitch propellers, pressurized cabins, and increased sound-proofing.

Globe Aircraft Financing Extensive Plant Expansion

Stockholders of the Globe Aircraft Corporation have approved a recapitalization plan authorizing the corporation to offer 150,000 shares of $10 par 5½ per cent convertible preferred stock to common stockholders on a pro rata basis at $9 per share. The plan makes the Texas concern the first manufacturer of private lightplanes to undertake a major postwar public financing program. John Kennedy, Globe president, announced that the estimated $1,275,000 in proceeds will be used to provide $250,000 in additional plant facilities, to retire a $960,000 RFC loan, and for working capital.

Beech and Lockheed to Use New Continental

A new 9-cylinder radial air-cooled airplane engine, an improved version of Model R-975, is being produced by Continental Motors Corporation for postwar executive-type and medium-size transport planes to be manufactured by Beech Aircraft Corporation and the Lockheed Aircraft Corporation. The new engine has a take-off rating of 525-hp. with direct drive and 600-hp. with geared drive.

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EXPERIMENTAL TURBINE TRANSPORT ordered from Glenn L. Martin Company for 1947 delivery has been pictured by United Air Lines as shown above. Utilizing General Electric's propjet engines, the plane is similar to Martin's 40-passenger Model 303 powered by reciprocating engines, but fuel consumption will be approximately one mile per gallon as against one and a half miles per gallon for the conventional type. Take-off weight will be 39,000 lbs., or 4,000 lbs. greater than that of the Martin 303, but its 34,000-lb. landing weight and 11,500-lb. all-cargo payload will be about the same. A 365-mph. cruising speed is expected.

$48,500 Seen as Price on 4-Place Commercial Helicopter

Sikorsky Aircraft division of United Aircraft Corporation is in production on a four-place commercial helicopter, the S-51, a development of the war-time R-5. The commercial helicopter, expected to sell for about $48,500, is powered by a 450-hp. Pratt & Whitney R-985 Junior engine, and has a gross weight of 4,900 lbs. and empty weight of 3,650 lbs. Dimensions include overall length (blades extended) 57 ft. ½ in.; overall length (blades removed) 44 ft. 11½ in.; height overall 12 ft.; main rotor diameter 48 ft.; tail rotor diameter 8 ft. 5 in.; main gear tread 12 ft.; pilot's cabin width 4 ft. 5 in.; passenger cabin width 5 ft. 2 in., and cabin depth 4 ft. 5½ in. Maximum rate of climb at sea level is 12,000 fpm. Hovering ceiling is 3,500 ft., and service ceiling is 13,000 ft. Cruising fuel consumption is about 28 gph.

AIA Seeks Surplus Sales Policy Revision

Urging a revision of government disposal policy, the Aircraft Industries Association has requested that commercially unsaleable surplus aircraft, parts, and supplies be made available at nominal cost for non-flight educational uses by profit-type aviation schools and manufacturing companies.

George F. Hannaum, director of AIA's industry planning service, revealed that under present surplus disposal policy, only non-profit educational institutions can obtain such aircraft and parts at nominal fees. Profit-type institutions can buy only commercially saleable surplus aircraft and parts, Hannaum explained. These are too valuable for classroom use and in many cases prices are prohibitive, Hannaum added.

The AIA's proposal is now under consideration by a subcommittee of the Interdepartmental Advisory Committee on Surplus Aircraft Disposal, and a recommendation is expected shortly.

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13,000 Vought Planes Used in War by Navy

United Aircraft Corporation has announced that more than 13,000 Chance Vought-designed airplanes were used by the Navy between the spring of 1940 and V-J Day. At the end of the war, 6,600 Corsairs had been built, and Chance Vought was building F4U-4 Corsairs at the rate of about 300 a month. Goodyear Aircraft Corporation and Brewster Aeronautical Corporation produced more than 4,700 Corsairs. The remaining planes were OS2U's and SB2U's. Chance Vought is now at work on new types of planes, including a jet fighter and one of more revolutionary design.

Small Gas Turbine Powers Auxiliary Power Plant for Aircraft

A new aviation auxiliary electric power plant whose prime mover is a small gas turbine is being manufactured by Westinghouse. Connected to the turbine is a 24-kw, 30-volt dc generator, and a 2.5-kva, 120-volt, 400-cycle generator. A 5-hp. motor for starting the turbine is also required. Other accessory power plants being studied will provide 400 cycle power at 40 to 50 kva for ac powered planes, and will include small dc generators for auxiliary 28-volt dc power.

Sperry Award to Grumman Engineer

The Lawrence Sperry Award for 1945 went to Richard Hutton, chief development engineer of Grumman Aircraft Engineering Corporation for "his outstanding contributions to the development of carrier-based aircraft." The award is made annually by the Institute of the Aeronautical Sciences for notable contributions by young men to the advancement of aeronautics. The Sperry Award has an honorarium of $250, and was endowed by the brothers and sister of Lawrence Sperry, who was drowned in a forced landing in the English channel in 1923.

Lockheed Expanding Service Department

J. Kenneth Hull has been appointed assistant general manager, and Clayton B. Snow manager of the customers' department of Lockheed Aircraft Service, an expanding division of Lockheed Aircraft Corporation. Reagan Stunkel is general service manager. Other promotions and appointments include Lyman G. Rice, former manager for Lockheed Aircraft Overseas, as head of administration; Roscoe Behan as supervisor of sales section, assisted by James Stockton in service and A. A. Guy, Jr., in parts supply. J. W. Lynch is manager of the inspection department. Overhaul, modification and flight inspection functions are directed by Harvey M. Schaub. Deane Severns manages the aircraft repair department. Other officials of Lockheed Aircraft Service include Ralph Peterkin, production control; W. W. Nixon, modification; George Stewart, service engineering; Don Young, field service; Charles Tiger, service training; Emile Erhard, plant engineering; F. Blecha, procurement; H. L. Vick, material; L. Kooi, productive and non-productive stores; James Murphey, sales order billing; Robert Cooil, accounting; J. J. Argostui, budget and finance; and Karl Kunze, industrial relations.

Col. Greenall Named to Franklin Institute Post

Lt. Col. Charles H. Greenall, director of research at Frankford Arsenal, has been appointed executive director of the Franklin Institute Laboratories, assisting Dr. Henry Butler Allen, secretary and director of the Institute, who will continue in overall charge of the research work at the Laboratories. Dr. Rupen Eksergian, chief consulting engineer for the Edward G. Budd Manufacturing Company, and Dr. W. F. G. Swann, director of the Bartol Research Foundation of the Franklin Institute, are acting as senior consultants to Dr. Allen. Other administrative personnel of the Laboratories will be Dr. Nicol H. Smith, director of the division of chemical engineering and physics; Ralph H. McClarren, division of electronics and instruments, and George S. Hoell, division of mechanical engineering.

Name Change

Pacific Fabricating Company has changed its name to Hammond Manufacturing Corporation. D. C. Hammond is to continue as president, retaining ownership of all stock. The plant equipment includes facilities for the fabricating of light and heavy metal units in nearly all production fields.

Martin Converting C-54's

The Glenn L. Martin Company, Baltimore, is converting surplus C-54's into luxurious new planes with new fittings and furnishings for commercial work. Some planes are being fitted with sleeper and lounge facilities. Martin has orders totaling more than $13,500,000 to convert ships for eight domestic and foreign airlines.

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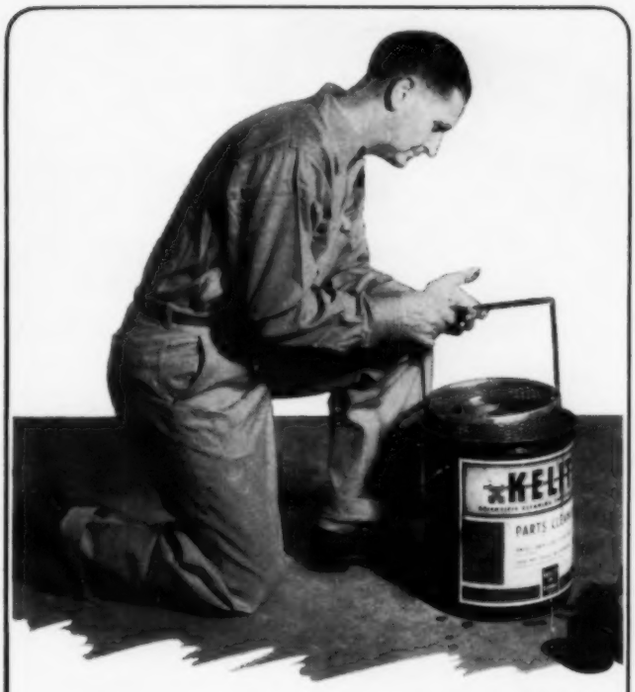

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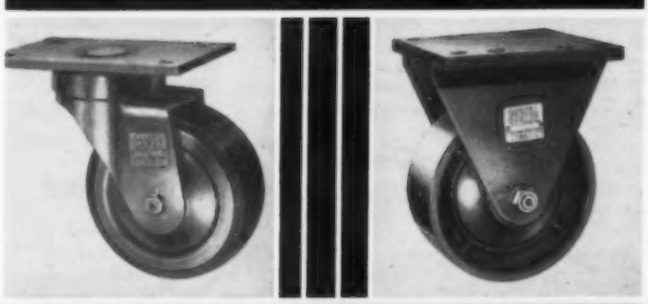

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Concern Felt Over GI Flight Training Boom Possibilities

Confusion over details marked the status of flight training possibilities under the GI Bill of Rights, under which the Veterans Administration is authorized to pay $500 for a training course of less than thirty weeks per year. Operators, flooded by inquiries from ex-servicemen, have found regional VA officials and those in Washington uncertain over all points covered in the law and its administration, and both aviation interests and the Veterans Administration are apprehensive lest a GI flight training boom springs up without adequate controls and protection against gyp schemes.

Participating flight schools, to be designated by VA, are required to have state educational department approval, and costs of instruction must be approved as "reasonable." Responsible flight operators are going into the project with caution, obtaining not only state approval but CAA approval if they do not already have it. Further clarification of details, for the guidance of ex-servicemen and operators alike, are expected to be issued soon, and will be analyzed in SOUTHERN FLIGHT next month.

AT-11 Tentatively Licensed at 7,850 Lbs.

Tentative CAA specifications have been issued for the licensing of converted twin-engine AT-11 Beechcrafts as transports having a maximum gross weight of 7,850 lbs., subject to possible later revision. A number of AT-11's have been declared surplus.

Other recent surplus developments included establishment of fixed prices for aircraft engines from $100 up, sales of which are handled directly from War Assets Corp., Aircraft Division, 425 Second Street, NW, Washington 25, D. C. Fixed prices for all surplus aircraft are expected to be set soon. Single-seater 150-hp. Culver PQ-14 target ships are expected to be placed on the surplus list, but none had been listed late in February.

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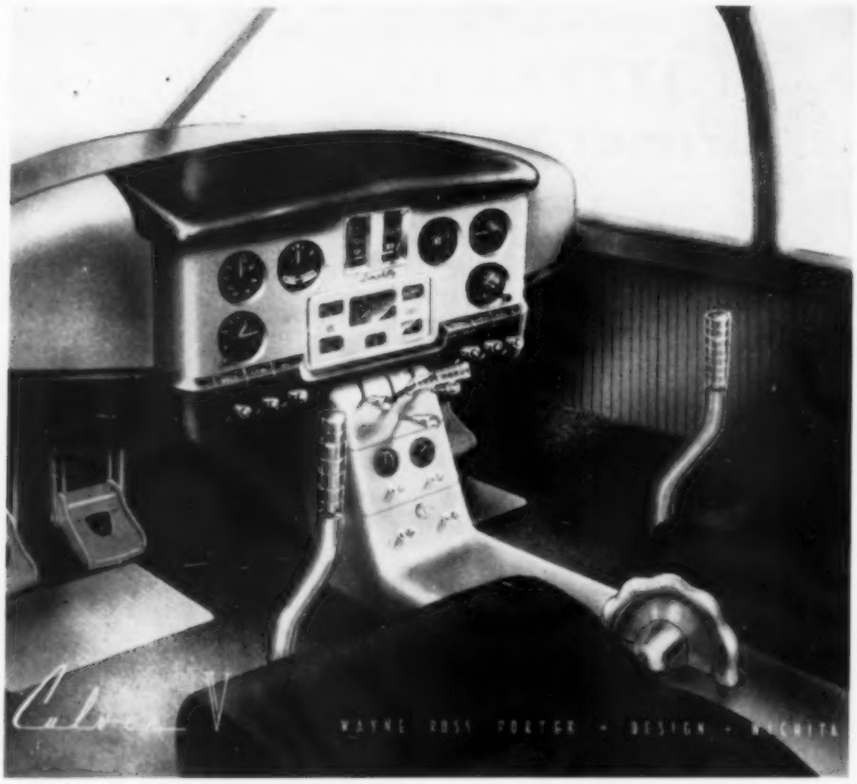

FIRST COCKPIT VIEW OF THE NEW CULVER MODEL "V" shows location of the Simpli-Fly system control wheel between the seats and the control system indicator centered on the instrument panel. The Simpli-Fly system involves the inter-connection of flap and stabilizer which causes the airplane automatically to trim itself for various flight attitudes. Note roomy cabin, full complement of standard flight instruments, dual control sticks, and rudder pedals.

Young Sworn in as Member of CAB

Clarence M. Young, who formerly served as Director of Aeronautics for the Department of Commerce, has been sworn in as a member of the Civil Aeronautics Board to serve the final year, ending December 31, of the term vacated by Dr. Edward P. Warner, who resigned to head the Provisional International Civil Aviation Organization. Young began his aviation career in the Army Air Service in 1917-18, became Director of Aeronautics for the Department of Commerce in 1926 and continued in that position until 1929 when he was appointed Assistant Secretary of Commerce for Air, and joined Pan American Airways in 1934, remaining for eleven years as manager of PAA's Pacific Division. With an LL.B. degree from Yale, he was admitted to the Iowa Bar in 1910. He is a member of the Royal Aeronautical Society of London, and Institute of Aeronautical Sciences, and received Transport Pilot's license No. 2 in 1927 and Glider Pilot's license No. 1 in 1929.

Private Flying Talks On ASME Program in Chattanooga April 1-3

Addresses by leaders in private flying will feature the aviation division of the American Society of Mechanical Engineers' Spring meeting April 1-3 in Chattanooga, Tennessee.

The program for Monday night, April 1, includes the following speakers and topics: W. T. Piper, president of Piper Aircraft Corp., Lock Haven, Pa., "Personal Aircraft—the Manufacturer's Viewpoint;" John H. Geisse, assistant to the Civil Aeronautics Administrator for Personal Flying Development, Washington, "Personal Aircraft and Their Effect on the Future;" and George E. Haddaway, editor and publisher, SOUTHERN FLIGHT, "Aviation in the New South." Chairman for this session of the meeting will be Dr. M. J. Thompson, head of aeronautical engineering, University of Texas.

Oklahoma Air Tour, Education Project Planned

Plans for an air tour and a state-wide aviation education program will be mapped by the Oklahoma Aviation Association at a meeting at Ada in April. Officers elected at a meeting of the group in Oklahoma City last month are Gene McGill of Alva, president of the Flying Farmers, president; Carlos Webb of Hugo, vice president;and Keith Kahle of Oklahoma City, vice president and general manager of Central Airlines, Inc., executive secretary-treasurer.

"Yes, my triple-size territory brings me the income right now that I've always dreamed of earning within the next ten or twelve years! And we're serving new areas our big competitor can't go into until he trains more field men . . . unless he starts flying his men like we do."

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AAF Status for CAP Continued; Truman Praises War Efforts

A three-day meeting of the forty-eight State Wing Commanders of Civil Air Patrol culminated March 1st with a dinner at which President Truman thanked CAP on behalf of the people of the United States for services during the war. A majority of both the House and Senate and fifty air corps generals attended.

General Carl Spaatz said, "As the CAP was indispensable to take up the slack during the war years so it is also essential to the immediate long range plans for America's air power. It continues as an auxiliary of the Army Air Forces."

Two weeks earlier, a committee of fifteen Wing commanders drafted postwar plans in the face of expected discontinuance of AAF auxiliary status on March 31, after which Federal appropriations will no longer be available for CAP. General Spaatz then agreed to continue the auxiliary relationship without funds, which were in minor amount as compared to the scope of the organization. CAP goes on with all possible encouragement from the AAF and other high official sources. To make a smooth transition from wartime to peacetime status.

The committee plan, approved and expanded at the all-states meeting, lays stress on the promotion of civil aviation and on flying activities in co-operation with operators to stimulate senior interest and attract air veterans as members. Rifle competitions, radio, physical fitness, and other phases also will be developed.

General Spaatz promised to help co-ordinate the CAP program with that of the Air Reserves, National Guard and ROTC. CAP Cadets who enter the Reserves will be given official credit for their preflight and military training. Reservists will be credited for time spent in teaching cadets.

CAP's big new job is to organize local committees to help find jobs for returning Air Force veterans. Teams of AAF officers are going by airplane to CAP units throughout the nation to help expedite this program.

ARMY AIR FORCES CERTIFICATES OF RECOGNITION were presented recently by Gen. Carl Spaatz to several Civil Air Patrol present and former Wing commanders, some of whom are pictured above. Top row, left to right, are Lt. Col. G. A. DaCosta, Illinois; Lt. Col. Walker Winslow, Indiana; Gen. Spaatz; Lt. Col. R. H. Baker, Michigan; Lt. Col. G. A. Stone, Ohio, and Lt. Col. J. F. Stratton, Wisconsin. Lower row, left to right, are Lt. Col. Harold Smethills, Colorado; Lt. Col. C. W. H. Schuck, Illinois; General Spaatz; Lt. Col. Harry B. Sidles, Nebraska, and Lt. Col. T. B. Roberts, Jr., South Dakota. —(Army Air Forces Photo.)

FIRST OF FOUR FLIGHT SCHOLARSHIPS to be awarded annually to deserving Cadets of the Cleveland Group, Civil Air Patrol, by the Optimist Club of Cleveland went to Cadet Cpl. William Janko, center, by E. C. Roland, right, of the Optimist Club of Cleveland. Captain Milton James, executive officer, Cleveland Group, CAP, congratulates Corporal Janko. Recipients of the scholarships are entitled to ten hours of dual instruction at Cleveland Airport.

CAP Headquarters Now at Bolling Field, Washington

The National Headquarters of Civil Air Patrol is now the 32d AAF Base Unit and is at Bolling Field, Washington, D. C. Headquarters was moved last year from New York City to Fort Worth, Texas, where it was under the jurisdiction of the AAF Training Command. The present move places CAP under the supervision of AAF Headquarters.

Government Funds Asked for CAP Search Missions

Search and rescue funds should be set up by state, federal, or local governments to pay CAP members for search and rescue work, the Portland *Oregonian* declared in a recent editorial. When a flier is lost, he may be missing for days before a search is started, the paper explained, and then the rescue party may be made up of friends or volunteers who pay their own expenses.

Wings Surveyed on Air Museum Project

At the special request of General H. H. Arnold, chief of the Army Air Forces, an opinion survey has been made of forty-eight state CAP Wing commanders as to the establishment of a National Air Museum so that the most important historical relics of aviation will be centered in one place.

Ports of Call

Birmingham, Ala.—*by Edith Wideman.* Aero Club committees have been working with city officials working out ground plans for the Victory Air Carnival to be held the first weekend in June. We'll give you more news on this when the plans take shape and the details have been worked out. Presently, it's all in the making.

Announcement from the Public Service Commission comes that a hearing is to be held soon to thrash out whether the intrastate segments of interstate airlines come under the economical regulation of the Commission. Southern Airways is qualifying its non-scheduled flying under this Commission.

Out Robert's Field way the GI's are converting from combat flying to private flying. Birmingham Flying Service has been approved by the Veteran's Bureau and the State Education Department to give flight and ground instruction under the GI Bill of Rights. Ralph Morrison, formerly an Army Primary Instructor with Southern Airways, is now instructing returned veterans under this set up.

A recent convert of the air is Bill Spencer; always before, Bill only liked air via newscasting for station WBRC by day. Now he is a star student of aviation by day and newscaster by night.

We've always contended that model builders were prospects for good fliers. Prize Model Builder Propst has borne out this contention. In a few days he will solo, and also will reach that ripe old age of sixteen and is ready to go.

Construction work has begun on a new taxi strip at the Municipal Airport which leads from the hangar to the East-West runway. The City is negotiating with the SPA with an eye toward acquiring some of the modification facilities and, we might add, space.

California—*by Tony Hagmann.* Grand Central Airport weighs in at Glendale. It is owned by Major C. C. Moseley, who has Major Denny for vp. It is a hen of a lot of airport and there is more activity aboard than on a fishing boat in a school of mermaids. One day we were out there batting out a few subscriptions when we met Jimmy McPherson. Jimmy introduced us to the field. He operates the Desert Airline and has been known to sell or trade a plane or so.

First, we said howdy to Paul Mantz, who flies all the movie people to the marrying grounds, Las Vegas. . . . then "Chief" Kidder, assistant to Moseley. . . . "Jackson" Beilby, Transient Aircraft Service, dept. . . . Jack Ross and Glenn Wyrick, at the "store." The "store" handles Firestone, Continental, Wright, Jacobs, Lycoming and parts for all that there stuff. It has a clean pilot's lounge. In fact the whole place is clean as a butchershop counter but not as empty. You can usually get what you need.

Then we met Rex Hardy and W. E. Candy. They are vice president and president of Western Continental Airlines. This is a new project with the first new Grumman Widgeon to be seen on the coast and Cessnas. They've been fixed up for the deluxe carriage trade (Les Bowman down in Ft. Worth really did a workover on the UC-78's). . . . the men in this company are late of the Navy and know service. They intend to give it out heavy.

We wandered down to the Ercoupe office (they're on this field like yankees in Texas) and met Harry Reynolds. He's in charge. When we saw the very attractive blonde in the office we knew Ercoupe was a popular place for three reasons—Ercoupes, blonde and Frank Argall. Frank has an unusual service to offer an eager group of customers. He is an aeronautical and marine consultant, with plenty of knowledge behind him to deliver the goods.

We wandered back to Jimmy's office and met Bob Titus. Bob is a photog who's getting recognition. Had a pix of Mantz in *Time*. Then Jimmy had to pick up a plane at Pacific Airmotive over at Burbank. This is a long hop, about three minutes. We had that much time so we flew over with him. It was fun to fly over and see all the Connies lined up . . . we've been promised a flight in one for ages . . . hint, hint.

Back again and found a crowd looking over the new Stinson 150. Ed Rice is the man to see at Western States Aviation Co., if you want a Stinson or Aeronca. Ed had just come back from the factory and had a mile-high stack of work ahead of him so we sasshayed off to see the Luscombe man. Vince Perron's Flying Service deals in Luscombes on the field and seems plenty eager to sell 'em.

Lots of these people bought subs from us, so you'll feel at home if you fly here . . . all good readers getting together. So we say, "thanks, Jimmy McPherson, for the tour of Grand Central."

Dallas—*by Vida Foster.* Plenty of big four-engine activity at Love Field recently when Delta Air Lines demonstrated their DC-4, the first forty-four-seat Deltaliner to go into service between Chicago and Miami. Mr. and Mrs. John Q. Public were escorted through the big ship and ooooh'd and aaah'd over the luxurious beige and blue interior appointments. C. E. Faulk, chairman of the board, C. E. Woolman, president, and Allen V. Birmingham, western district traffic manager, all were on hand for the big event. American Airlines displayed their C-54 in use by the Air Transport Command, and Braniff Airways let us have a look at the one they are using for crew training.

They are never too young or too old at Mustang Airport in Dallas. Just the other day, after 62-year-old Eben Robison had soloed with nine hours of instruction, four-month-old John Stevens, Jr., landed at Mustang en route to Phoenix, Ariz., and Nebraska. Young Stevens, who has more than twenty-eight hours of flying time, was flying with his parents, Lt. and Mrs. John W. Stevens, in their private plane.

The Bumblebee, super-duper powered glider manufactured by the Nelson Aircraft Corporation of San Fernando, California, was demonstrated from Hudson Airport with hundreds of glider-minded people present. Bob Blaine and others of the plant were on hand to answer questions.

Several new feeder lines are in operation throughout the state. Dal Air Lines are operating between Dallas, Tyler, Lufkin and Houston with seven-place Norsemans. Westland Air Lines operate a daily UC-78 schedule between Dallas, Fort Worth and San Angelo. Texas Airlines make their run between Brownsville and Dallas, and we hear that Oilwell Drilling Company plans to establish a run between Dallas, Odessa and Monohans. Western Airways, a non-scheduled operation for both

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passengers and freight, is headed by Edward L. Colby and bases its UC-78's at Clearview Airport in Dallas.

Derby Frye, assistant sales manager of Cessna Aircraft Company, recently flew into Dallas in the new Cessna 140 and demonstrated it to a large group of prospective customers at Mustang Airport.

The final windup of the Aerocades publicizing the Southwestern Aviation Exposition at Fort Worth, in connection with the Southwestern Exposition and Fat Stock Show, was staged by thirty private planes and ninety people the week end of February 23-24. The first stop gave Stamford citizens an opportunity to really live up to their reputation for good ole western hospitality with hot coffee and doughnuts served at the airport. Several Aerocade participants realized the ambition of a lifetime when the police escort provided by the city of Lubbock opened its sirens full blast down the main drag when we went to the Hilton Hotel for lunch, complete with speeches, carrots and peas and entertainment by Nancy Lou and Carmen, a couple of mighty cute little Fort Worth girls dressed in full cowboy regalia. The Amarillo Jaycees and city fathers turned out en masse for the banquet Saturday night, where the speeches were hilarious. Sunday morning but there were a lot of people on hand for our arrival at Childress. A quick refueling from the big red truck with the flying horse emblem and we were on our way to Olney for some very welcome food, drink and entertainment. At Graham members of the Aerocade participated in the dedication of their new airport. We enjoyed the hospitality of airport manager Shaeffer's home and learned they are getting set up to render jam-up service to private fliers.

Galveston, Texas—Two nationwide air shows will be staged in Galveston in 1946, it was decided at an organization meeting of the new Airpilots' Club last month.

James Vacek was elected chairman of the group, R. P. Massey was named vice chairman and W. Ravenstein, secretary and treasurer.

"We discussed plans for two nationwide air show contests," Vacek said. "Model airplane exhibits will also be shown at the contests. The purpose of these meets is to bring pilots to Galveston as they are brought together for events in other cities."

It was announced that a club house has been made available at the airfield for members and visiting pilots. Mrs. A. E. McDonald was appointed to decorate the club house.

A. A. Smith submitted the name for the club and will receive the one-hour plane ride as a reward.

Members of the club include: James W. Phipps, R. J. Swanson, C. E. Tennyson, Russel Markwell, William Decker, Robert Scholes, Earl Stafford, Wayne Stafford, Mrs. Gene Parrish, Bart Welsh, Robert McGar, T. E. Lewis, W. C. Steed, T. W. Edler, T. D. Nuckols, Norma Lockhardt, Jack H. Burman, J. G. Willner, Jr., L. Cadle, Warren H. Houston, W. H. Sims, J. G. Alexander, C. A. Falkenhagen, Jr., A. E. McDonald, J. J. DeGroot, Ellen Grace Shearer, J. D. Yankee, Raymond Grant, C. H. Moore, R. L. Smith, Dr. W. Stevens and M. J. Bavoux.

Kansas City, Mo.—*by Marion Melcher.* There's a new sign going up in Kansas City. Air Associates has moved in. The company will occupy the building formerly housing Missouri Aviation Corporation. Walter DeLancey is now general manager of the Kansas City-Chicago branches, and his resident manager here is Roy Thurston, known both as a pilot and aviation executive. Thelma Badami

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Kansas City University is offering a course in flight training, with the Kansas City Flying Service co-operating to make the course available. Instruction is open to all college students, including veterans. Eight courses are included in the flight training and all students must enroll for the course in principles of aeronautics if they desire flight instruction.

There's a survey going on for possible airport sites to fill the future needs in Greater Kansas City and the surrounding area within twenty-five miles.

Bill Green, manager of Fairfax Municipal airport, and others met in the first step to reactivate an air forces reserve unit in Kansas City. Bill is a veteran of both world wars, and believes that several hundred in Kansas City alone will be included in the reserve unit.

Marshall, Texas—*by Bill Aechternacht.* A $350,000 bond issue has been voted by Harrison County for the building of the new Memorial Airport. It will be constructed on the present site of the Marshall Airport, with additional acreage being obtained to make the airport larger. All land has been acquired, plans and specifications have been drawn and approved by CAA. Plans include an administration building, hangar, taxiways, runways, and lights. Work will start in the very near future, and when completed will give Marshall a Class Three airport.

The airport is now being operated by Marshall Aeromotive. W. W. Sanders is manager-instructor with J. D. Patton also instructing. Plane owners are E. Key, Jr., Ford Farr, Herschal Morris and W. L. Smith. Thirteen planes based at the airport—two Luscombes, two Pipers, five Taylorcrafts, two Interstates, a Stinson and an Aeronca.

Commercial license holders include Jack Beck and W. L. Smith. Student pilots are J. B. Baldwin, Jr., E. F. Bolander, J. E. Carroll, J. C. Clark, Jack Clayton, John Conley, W. O. Commer, Lucy Daniels, W. O. Edwards, Harry Eisel, Jr., Ford Farr, Oscar Haddad, Ray Hengst, T. H. Hines, S. D. Jackson, C. D. Jobe, B. E. Jones, Clarence Kenyon, Gwendolyn Kercheval, Floyd Lofton, Carl B. Mauthe, Oscar Meddlin, Jr., James Meyers, Shields Mitchell, Betty McNatt, Truman Odum, Walton Padgett, Bob Price, J. A. Pistole, Charles Post, Tom Post, W. A. Salmon, Roy Snider, Scottie Sutton, Nancy Tucker, G. E. Verhalen and H. H. Whatley.

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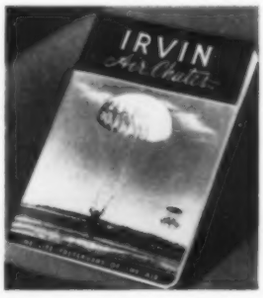

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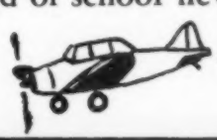

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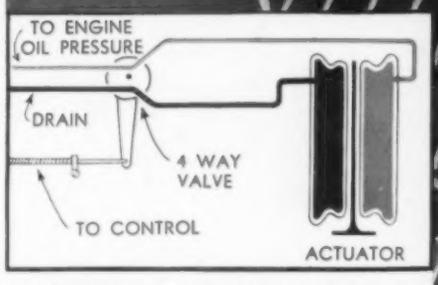

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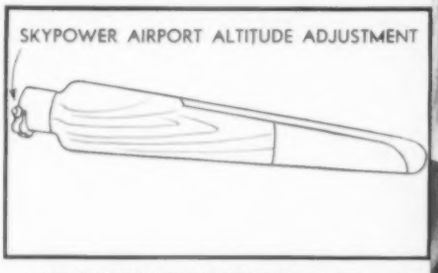

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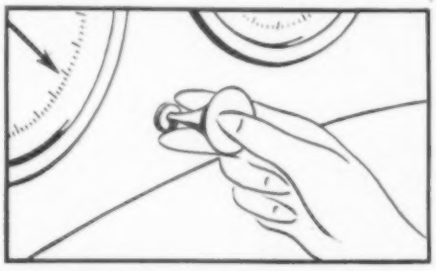

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